

Going global on the Web isn't as straightforward as it sounds. Global Innovators follows page 32.

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Migration costs stall NT drive

► Users mull strategy, keep Windows 3.1 faith

By April Jacob

DESPITE THE MASSIVE push behind Windows NT, analysts said most large corporations still run Windows 3.1. And analysts are telling those users that it will typically cost nearly twice as much to migrate to NT as it does to move to Windows 95.

There is an added concern here for Microsoft Corp. The company has been pushing 32-bit upgrades of its applications, and a conservative user base could mean flat sales, said Christine Tocq, an analyst at San Jose, Calif.-based Datquest.

Although few users would be surprised to hear that it costs

more to migrate to Windows NT, it is the gulf in costs that stops some short.

MIGRATION AGGRAVATION

Moving from Windows 3.1 to Windows NT costs 32% to 47% more than a Windows 95 migration, according to Gartner Group, Inc., in Stamford, Conn. That's because of hardware re-

Migration costs, page 24

IT labor emergency prompts Feds to study, fix shortage

By Julia King

THE IT SHORTAGE has gone from bad to worse, according to numbers released last week by the U.S. Department of Commerce.

But to information systems

managers, it is hard to comprehend things getting any more dire on the hiring front.

"We recently put an ad up for applications people in the Chicago Tribune and didn't receive one response," said John Zarb, chief information officer at Libby,

Inc., a \$500 million glassware company in Toledo, Ohio. "I just can't believe it."

"Two years ago, ad would have netted 80 resumes," Zarb said.

And things are only going to Labor emergency, page 14

BUYING STRATEGIES

IS will risk shaky vendors for right fit

By Craig Shadman

THEY ARE the brave and the few: information systems shops that dare to jump aboard a vendor ship that is taking on water and struggling to stay afloat.

Take Clark Material Handling Co., for example. The Lexington, Ky., maker of forklifts signed on as a new customer with Inforix Software, Inc. in June, even though the database vendor had just announced a surprise first-quarter loss so big it shook the company to its financial core.

Clark is betting big on a combination of Inforix databases and The Baan Co.'s client/ Shaky vendors, page 14

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HOMEWORKING

► Network pros often chained to their jobs

By Patrick Dryden

NETWORKS HAVE become so vital to corporate America that their caretakers increasingly live at the end of a short leash.

For Cheryl Harris, supervisor of the transmission control center at Sprint Corp. in Westwood, Kan., that meant leaving a hot slot machine to tend to a network emergency.

Harris had \$400 in the tray and \$300 in credits when her ever-present pager summoned her from a casino. "I had to cash out quickly and miss a big jackpot. It's a way of life after 15 years" in networking, she said.

Network managers in Fort

time 1,000 firms know the help desk and automated monitors may call or page at any time, robbing them from bed, disrupting their weekends or yanking them back from personal pursuits to restore the heartbeat of business communications.

And network engineers increasingly use home PCs to check their networks as soon as they wake in the morning. Many network professionals attending this week's Network/Interop '97 conference in Atlanta will be looking for tools that, ironically, will help them do even more remote monitoring via World Wide Web browsers.

Net professionals, page 28

Shelly Ogle says Harris Corp. needed a bandwidth-management system

By Bob Wallace ■ **Soaring demand for World Wide Web access has overwhelmed wide-area network lines at many companies, sending IS managers in search of bandwidth-management systems to restore order.**



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MIT engineers biggest E-commerce deal

► Will buy all computers online in \$125M pact

By Mitch Wagner

IN WHAT COULD be a record-setting deal for Internet commerce, MIT has signed an estimated \$125 million, five-year pact to buy all its computers over the 'net from reseller NECK, Inc., the two companies are expected to announce today.

The purchasing system was launched in the campus store for students and faculty just after Labor Day. MIT, in Cambridge, Mass., plans to add internal purchasing early next year, said Tom Mullins, director of administration and finance for information systems at the school.

NECK, which beat a half-dozen vendors to win the contract, makes its profit by marking up the systems. But MIT officials said the school will save money overall compared with buying directly from manufacturers because NECK offers a one-stop shop. MIT also will save money on the cost of paperwork and by allowing its staff to comparison-shop deals among multiple vendors more easily.

BIG SAVINGS

MIT now spends about \$25 million per year on systems purchases. Faculty and staff buy about \$13 million worth of computers per year.

"We expect the savings to be considerable," Mullins said, noting that savings also will come from eliminating purchase orders and on-campus inventory. "We're still trying to get our arms around how significant the savings will be."

World Wide Web-based purchasing is less expensive than paperwork, said analyst Bruce Gupstill at Gartner Group, Inc. in Stamford, Conn. "The average purchase order, for anything from a pencil to a truck, comes to \$10 to \$50 in total cost just to go through the steps of the process." The cost of doing business on the Internet is one-tenth of that, he said.

MIT faculty and staff will have Internet access to NECK servers in Peabody, Mass., where they will be able to order computers for internal MIT use. The school's IS department is building electronic data interchange links from NECK's sys-

tem to MIT's SAP AG business buck-office systems.

Employees will fill out a form online requesting the systems they want to buy, and the NECK system will check with MIT's SAP system to make sure the employee is entitled to buy the equipment. If approved, billing, payment and record keeping will be handled elec-

tronically.

As a result of the deal, MIT is shrinking its 5,500-sq.-ft. campus storefront and warehouse to a smaller unit that can accommodate a smaller sales staff and a showroom of about a dozen systems. The MIT store now sells products at a 10% to 12% markup to cover the costs of running the store. Mullins hopes to halve that with the NECK deal.

BUSINESS-TO-BUSINESS

The agreement between MIT and NECK is part of a growing trend of business-to-business procurement. Both Boise Cascade Office Products Co. and Office Depot, Inc. let businesses purchase office supplies over the Internet.

Business-to-business travel booking is offered by several companies, including The Sabre Group and American Express Co., in a joint deal with Microsoft Corp. And General Electric Co. plans to do billions of dollars in procurement over the Internet with multiple suppliers, Gupstill said.

But the MIT/NECK agreement could be the largest ever for Internet commerce between two organizations. □

NEWS

- 3 **Lotus partners with Sun Microsystems** Lotus partners with Sun Microsystems to give its clients access to Sun's distributed computing platforms.
- 4 **Microsoft shifts focus from CORBA to XML** Microsoft is shifting its focus from CORBA to XML, progressing cross-platform tools for Windows.
- 5 **IBM adds support of Internet Information Server and Visual Basic to the desktop** IBM has added support of Internet Information Server and Visual Basic to the desktop.
- 6 **Microsoft launches a new version of its office suite** Microsoft has announced a new version of its office suite, Microsoft Office 97, which includes Word 97, Excel 97, PowerPoint 97, Access 97, and Outlook 97.
- 7 **Observers offering at Compaq and Letras as they offer new products at Wholesale 3.1** Users who don't want to buy.
- 8 **Microsoft's 5.0 Beta**
- 9 **Thinking seriously when planning IT purchases** As budget cuts force IT managers to think seriously when planning IT purchases.
- 10 **Small business owners can now buy PalmPilot** Small business owners can now buy PalmPilot.

FEATURES

- 11 **How to succeed in business** Dealing with deadlines.
- 12 **How to succeed in business** With direct help from IS.
- 13 **How to succeed in business** With help from the Internet.
- 14 **How to succeed in business** With help from the Internet.

ETC

UP FRONT

Caveat surfer

We are frequently visited by vendors with wondrous multimedia tools. They offer eye-popping demos with 16 million-color images and stereo sound. Their target is invariably the Internet, that big, beautiful global resource about which one news article last week intoned "practically all voice, data and visual communications would flow through" one day. I often return to my desk after these meetings, open my browser, click on a hyperlink and wait.

And wait.

It is exquisite irony. My company has plenty of bandwidth and a T1 link to UUnet, but the sound of tapping fingers is constant in our offices as people wait for Web pages to load. Sound familiar?

Keynote Systems, Inc. in San Mateo, Calif., in conjunction with Broadwatch magazine, recently set up 27 computers across the country to download pages from a handful of Web sites every 15 minutes for a month. Keynote concluded that

average throughput of the Internet was about 40K bps/sec.

At the recent Society for Information Management interchange meeting in Boston, one speaker said that his biggest recent flop was a desktop videoconferencing sys-

tem that users shunned because it was too darned slow. How many of your friends use Internet telephony?

Silicon Valley venture capitalists are pouring tons of millions of dollars into start-ups that promise to do multimedia on the Internet. Telephone carriers will tell you that you will soon be drowning in bandwidth. Server makers boast of 10,000 transaction/sec. on Intel-based servers. Yet for most of us, the World Wide Web is very much a reality.

Be cautious of inflated claims about the Internet's promise as a multimedia paradise. And if you're actually using a successful Internet multimedia application, send me a note at the address below.

Paul Gillis, Editor

Internet: paul_gillis@ca.com

THE FIFTH WAVE
BY RICH TENNANI



Telecommuting gets real

► Management backing key, outsourcing can drive success

By Kim Girard

COMPANIES ARE starting to move beyond fledgling telecommuting pilot programs by formalizing the positions of people who oversee the programs and by seeking help through outsourcing.

Analysts say pilot telecommuting projects often fail without a commitment from the information technology department and the approval of high-level executives. And without a formal companywide plan, employees' telecommuting rights could be pulled at the whim of a new manager or lost when IT decides it can no longer support remote access.

Without a commitment of systems support that enables 8,000 sales and service employees to have full remote access to their desktops, "this project would have failed," said Mike Ruffolo, vice president and chief information officer at NCR Corp. in Dayton, Ohio.

During the past 18 months, NCR has cut operating expenses by between 10% and 45% by eliminating branch offices, paper and desk space, Ruffolo said.

OUTSIDE HELP

While NCR organized its own telecommuting project, other companies are turning to consultants such as start-up Telecommuting Success, Inc. in Englewood, Colo., which helps businesses develop, implement and manage telecommuting programs. The company trains up to 100 telecommuters per month, said David Meade, company president.

So far, Telecommuting Success have worked with J. P. Morgan & Co., which has 600 telecommuters, and Morgan Stanley & Co., which has at least 500 telecommuters, on everything from training managers on how to gauge telecommuter productivity to setting up home offices.

Meade said companies that turn to consultants often are hesitant to assign internal people to a pilot project that might go down in flames when a manager leaves the firm.

"It's a far more complex environment than just having one or two people handling it internally," Meade said. "Companies have said we want to outsource

turn to her for support.

"I am one of the few people with any experience with these projects," Gomez said. Although providing telecommuting advice is now an official part of her job, "it's certainly not a position we'd hire a full-time person for," she said.

At Chevron Corp., Sue Osborn, corporate work and family manager, also is folding telecommuting responsibilities into her job. Osborn said she will draft guidelines that detail telecommuting equipment needs, how to choose who can telecommute and how managers make telecommuting decisions.

"We're starting to get to many questions about it," she said. "We need more consistency more than anything."

Success formula

Companies need to do the following to make sure their telecommuting projects succeed:

- Plan from the top down; recruit the support of executive management.
- Draft a formal policy that is broad enough to apply to any department.
- Involve your top IT people from the start.
- Investigate the company's legal responsibility to the telecommuter when the employee is working from home, including workers' compensation issues.
- Train managers and employees about what to expect.
- Stay away from small-scale pilots that run on donated equipment and nickel-and-dime budgets.

— Kim Girard



"I don't think we would have had the same cooperation and commitment that we got inside the firm"

and weave it back into our management structure."

But Merrill Lynch & Co. has chosen to keep its telecommuting project inside the company, which has 400 telecommuters and a lab where potential candidates can try working away from management before heading home.

Caroline Mansfield, vice president and director of alternative work arrangements, has six staff members assigned to the employee remote access and telecommuting program at the company's private technology group in Somerset, N.J.

"With a consultant or outside vendor, I don't think we would have had the same cooperation and commitment that we got inside the firm," she said.

At Hughes Aircraft Co. in Los Angeles, telecommuting projects have fallen to Carol Gomez, a corporate manager who worked on a pilot telecommuting project in 1993 and has drafted informal guidelines, said other units — including a division of 200 employees now setting up a program — now



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Managing, page 8

Photo by Steve Liss

GAO slams U.S. Army's year 2000 preparation

By Sharon Machlis

TH E U.S. ARMY'S logistics center faces "critical problems" in grappling with its year 2000 project, raising the specter that the Army won't be able to buy, maintain or transport some needed military equipment after Jan. 1, 2000, unless current efforts improve, according to a congressional watchdog agency.

"As a result, it could be extremely difficult to efficiently and effectively equip and sustain the Army's forces around the world," concluded the General Accounting Office in a study released last month.

SNAP CITY

For example, equipment ordered after Jan. 1, 2000, could be identified as 99-year-old excess inventory and slated for disposal, the GAO said. Equipment maintenance facilities could be temporarily shut for lack of spare parts, and there could be delays in maintaining or replacing weapons systems components, the GAO said.

The Army's logistics center manager more than \$3 billion worth of equipment and supplies each year.

The report is the latest in a string of warnings that some agencies' failure to wrap up year 2000 assessments on time could delay repair and testing past the project's crucial deadline. The GAO had earlier

charged that "the Defense Department's computer system inventory method was inadequate to determine systemwide year 2000 problems."

Although the Army's Logistics Systems Support Center (LSSC) has taken several important steps to address its year 2000 computer problems, the GAO said, it hasn't adequately dealt with competing workload and staff priorities.

MANY ISSUES

Other problem areas cited include scheduling test data, developing test plans, dealing with outside partners to ensure data can be properly exchanged and devising a contingency plan if the center's computer systems aren't fully functional by January 2000.

"We believe LSSC will find it increasingly difficult to prepare [its] Commodity Command Standard System] in time," the GAO concluded.

The Defense Department didn't comment on whether the Army's year 2000 project is at risk. But it agreed with GAO recommendations and has already begun implementing most of them, including drawing up a contingency plan, the agency said. The Army has already canceled or postponed other systems work, such as reducing the number of new software releases, to focus on the year 2000 work.

Domino targets mainframes

► 10,000 mail users can be served from one S/390

By Barb Cole-Gemolki

HOPE TO cash in on the need for more scalable electronic mail, IBM and its Lotus Development Corp. subsidiary last week shipped a version of the Domino messaging server for IBM's S/390.

Though few expect companies to purchase a new mainframe just to run Domino, the software could appeal to owners of S/390 hardware who are looking for a messaging system to support thousands of users.

"This product won't sell S/390s, but it could be compelling for anybody who one day is thinking about Domino," said Steve Haggerty, a consultant in the Los Angeles office of Ernst & Young LLP.

IBM officials said sites could run as many as 10,000 messaging users, making it an ideal

backbone E-mail server for a big company. A PC server typically handles fewer than 500 mail users per server.

Reducing the number of servers could cut administrative overhead. IBM officials said Domino for the S/390 would also be able to leverage S/390 systems management functions, further reducing management costs.

IBM is charging \$16,350 for the mainframe software and one year of maintenance. Users called this a bargain because a single-processor version of Domino costs \$1,495.

Bill Sheely, vice president of transaction processing services at Banc One Financial Card Services in Columbus, Ohio, a large Domino user, called the development a good idea. "When you think about managing groupware on an enterprise level, this

Domino on the mainframe

PRO

- Extremely scalable
- Sites that use S/390 systems management features can balance Domino workload

CON

- Third-party products for Domino may not run on S/390 platform
- Lack of mainframe-savvy Domino developers

Win CE 2.0 makes handhelds viable for IS

By Kim Girard

INFORMATION SYSTEMS managers say Version 2.0 of Microsoft Corp.'s Windows CE operating system will make it easier to develop corporate-strength applications for handheld devices.

"I think [Windows CE 2.0] is going to be a turning point for IT shops that want to build applications for running their businesses," said Gerry Purdy, president of Mobile Insights, Inc., a consultancy in Mountain View, Calif.

To aid that effort, the operating system, which was announced last week, will be equipped with a C++, Java and Visual Basic tool kit. It also now supports Ethernet, so end users with handheld devices can connect to corporate LANs in real time.

The upgrade also supports Pocket PowerPoint for presentations, the ability to print from a

handheld and larger color screen displays.

"We're going to take another look at it," said Joseph Awe, director of information technology services at PECO Energy Co.

Enhancements to Windows CE 2.0

- Ethernet support
- Pocket PowerPoint
- Support for 32-bit color displays
- Win CE E-mail client, Pmail, will support attached files
- The Internet Explorer 4.0 browser will support writing in native HTML

in Philadelphia.

Awe, who said he found CE 2.0 lacking, would like to equip company managers with CE 2.0 handhelds running World Wide Web-based applets for inventory, inspections and reading meters.

The addition of Java makes CE 2.0 much more useful for Web-based application development, Awe said.

And wireless Ethernet capability will let physicians room the hospital with a handheld, without needing to synchronize data between the device and a PC, said Tom Giannotti, CEO of Plyta, Inc., in Houston.

Plyta, which makes patient care information systems, supplies its CE-compatible handheld applications to Massachusetts General Hospital in Boston.

Card-size device hits the PDA market. Page 71

BY BARB COLE-GEMOLKI

For those and other related links, point your browser to www.computerworld.com/relatedlinks.html. <http://www.computerworld.com/relatedlinks.html>

— Lotus white paper on Domino and other topics: <http://www.lotus.com/whitepapers/whitepaper.htm> <http://www.lotus.com/whitepaper.htm>

— Domino Home page: <http://domino.lotus.com/home/> <http://domino.lotus.com/home/>

— Domino knowledge base: <http://www.lotus.com/white/> <http://www.lotus.com/white/>

is certainly worth looking at," he said.

"The more scalability you have, the better," agreed Gary Rowe, principal at the Atlanta office of Rapport Communication, a consulting and market research company. He said because of application downtime, "a lot of companies have mainframes with available CPU cycles on them."

User group meets Java, Macman to manage mail. Page 53

WorldCom bid surprises MCI

Acquisition could lead to better deals for users

By Matt Hamblen

IF LAST week's audacious \$30 billion stock bid by WorldCom, Inc. to buy MCI Communications Corp. succeeds, it could help usher in better deals for corporate customers seeking Internet bandwidth and telecommunications services, analysts and users said.

The bid clearly would help long-distance provider MCI, based in Washington, gain access to WorldCom's "local loops," the coveted last network links to end users' offices.

It would also give Jackson, Miss.-based WorldCom control of most domestic Internet traffic, some observers said. Less than a month ago, WorldCom grabbed bandwidth from CompuServe Corp. and America Online, Inc. in a three-way deal.

Some fear that control of all that bandwidth could position WorldCom to raise the cost of Internet access. For example, earlier this year, WorldCom be-

gan charging small Internet access providers for hooking up to its network. That is something that company network managers should follow closely to make sure their companies aren't charged more, analysts said.

But several users and analysts said they doubted that overall pricing will go up, given the many large players in the bandwidth game.

PRICE CONCERN

"I don't think enterprises should worry that pricing will go up, since there are plenty of Internet service providers out there," said Matthew O'Brien, past president of the Communications Managers Association. "But there's still a question whether WorldCom will push their weight around."

"There is always the potential for higher costs, but as competitive as the market is, prices in all sectors have come down," said Bill Dyer, director of information systems at CinCom Sys-

ONE-YEAR OUTLOOK FOR TELECOMMUNICATIONS PROVIDERS		
Local loop	Internet	Long distance
 Will become strongest of the long-distance carriers in local-loop market	 Will be the biggest bandwidth provider if it buys MCI	 Fourth in market; second if MCI deal goes through
 Will become a player with business users	 Residential base will grow	No. 1 in the market
 Best prospect for improvement if WorldCom deal goes through	 Without WorldCom, it will remain strong	 Second in the market
 Partnership with SunTel will help its growth	 Will offer more managed Internet services	 Third in the market
 Will sell second phone line to PC users	 Will expand services for residential users and some businesses	 Success will depend on regulations
 Will sell second phone line to residences and businesses	 Will expand services for residential users and some businesses	 Success will depend on regulations
 New homes will build customer base	 Will expand services for residential users and some businesses	 Success will depend on regulations
 Will sell second phone line to former customers	 Will expand services for residential users and some businesses	 Success will depend on regulations
 Will benefit from growth outside of the Western region because of cable partnerships	 Will expand services for residential users and some businesses	 Success will depend on regulations
 Will benefit from court battles with long-distance carriers	 Strong potential growth because of BBN communications purchase	 Success will depend on regulations

tems, Inc. in Cincinnati. "I would hope this kind of deal shows there is more competition and means we can get better volume discounts."

Dyer said his company could benefit tremendously by the deal, because CinCom already receives frame-relay services from MCI and WorldCom and uses WorldCom for domestic long-distance service.

INTEGRATED VENDORS

"Now it looks like we'll be dealing with one vendor, and that brings us closer to our objective of minimizing the number of vendors we do with," Dyer said. "And if WorldCom provides the same level of [good] service we've had, we'll be ecstatic."

Dyer, who already has struck service agreements with WorldCom for quality of service, said he is confident those agreements will remain in place.

That is the kind of thinking that makes analysts believe a WorldCom-MCI merger would create a more competitive marketplace, despite its bandwidth dominance.

"The result [of this merger] would be an organization as competitive and as powerful that it would force other telecommunications carriers to

compete more effectively and bring about major competitive changes in the marketplace," said analyst Tom Nolle, president of CTMI Corp. in Voorhees, N.J.

David Bohnett, president of GeoCities in Santa Monica, Calif., said WorldCom's bid shows that major players are willing to invest massive amounts to build the Internet backbone, which helps all users.

MCI directors will have to choose between WorldCom and British Telecommunications PLC. BT recently downgraded its original offer of \$4 billion in stock to about \$2.8 billion. Even at the lesser price, some analysts said, BT is the better choice in the long run, because it provides more of an entry to rich global markets than WorldCom.

The BT and MCI boards have already approved their merger, and a shareholders' vote on that deal had been expected by the end of the year. MCI officials said the WorldCom offer was a complete surprise.

Because the WorldCom bid offers such value to stockholders, analysts and even MCI investors said it will be hard for MCI to walk away. Some said MCI might be reluctant because BT's bigger worldwide presence

would help in negotiating deals in many countries.

But WorldCom has its own worldwide presence and has tended to buy up local access facilities in foreign cities rather than form partnerships. Dyer said he was impressed that WorldCom owned so many facilities in the cities abroad where CinCom operates. □

Online reporter Stewart Dick contributed to this article.

Corrections

The charts relating to a survey of user preferences for browsers from Microsoft Corp. and Netscape Communications Corp. (CW, Sept. 29, pages 1 and 2, "Exploring to slip past Navigator") should have indicated that the survey base, included only users who run Microsoft or Netscape, not the 9.2% who use other browsers.

The story "Wireless users outstanding in field" in the Aug. 25 issue incorrectly stated that laptop leasing is included in Wireless Telecom, Inc.'s bundled offering to wireless users. □

FAQs: Wheeling and dealing

Q. What is WorldCom's offer?

A. WorldCom is offering MCI Communications \$41.50 per share in an exchange of its own stock. Total value of the deal is about \$30 billion, but that depends on stock prices for both companies. Last Thursday, MCI stock closed at \$36.60, and WorldCom stock closed at \$37.80.

Q. What happens to the ongoing deal for British Telecommunications to buy MCI?

A. Stockholders of MCI and BT still must approve the deal, valued as low as \$18 billion. BT reduced its original offer, which was estimated at \$34 billion, because MCI reported a bad quarter and incurred unexpected costs entering the local market. Many believe MCI stockholders will favor the better WorldCom deal before voting by year's end on the BT deal.

Q. What are the benefits of the WorldCom deal?

A. WorldCom gets network bandwidth that MCI holds, and MCI gets important pockets of local access. Even BT could gain if it backs out, because it holds a 20% stake in MCI.

Q. What is WorldCom?

A. Based in Jackson, Miss., WorldCom is the fourth-largest long-distance company in the U.S. It gained attention for its purchase last month of CompuServe Corp. in a three-way deal with America Online, Inc. Last year, WorldCom purchased the parent of UUNET Technologies, Inc., a major Internet service provider, which includes Microsoft Corp. among its investors.

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Exchange users OK with wait

► NT migration takes priority over upgrade

By Barb Cole-Gomolski
SAN DIEGO

MICROSOFT CORP. appeared to win over the bulk of Exchange users here last week with plans for its next messaging server release, which will offer tighter integration with Windows NT directory and management tools.

In contrast to last year, when many users were critical of the company's messaging efforts, attendees at this year's Micro-

soft Exchange Conference seemed pleased with the product enhancements — even though it means they will need to upgrade both their messaging server and their operating system to take full advantage of the features.

Microsoft officials said the new version, code-named Platinum, will be released in the middle of next year.

It will share Windows NT 5.0's Active Directory, which is

expected to ease large deployments by making it easier to add and move users among servers.

Platinum also will take advantage of the "Zero Administration" feature of Windows NT 5.0, which eliminates client-side upgrades and automates recovery when systems crash.

DUAL UPGRADE NEEDED

Users praised the company's plans despite the dual upgrade requirement and even though the integrated directory is at least eight months away.

"A global directory is a nice technology, but most companies don't have one in place today," said Mark Bennett, information systems manager at Security DBS, a Dallas-based division of Dresser Industries, which makes drill bits for oil rigs.

Several users echoed Bennett's comments, saying they are preoccupied with migration issues and aren't yet ready to tackle the assembly of an enterprise directory.

Patrick Kildea, a senior consultant at Vanstar, a national consulting firm in Iselin, N.J., said the lack of an enterprise di-

Microsoft in yet another Outlook

Better Internet tools and a simplified user interface are on tap for users of Microsoft's Outlook electronic-mail and collaboration client.

Microsoft officials provided a design preview of the upcoming release, dubbed Outlook 98, at last week's Microsoft Exchange Conference.

Expected in the first half of next year, Outlook 98 will support several Internet protocols, including the Internet Message Access Protocol (IMAP) and the Lightweight Directory Access Protocol (LDAP).

IMAP gives users more flexibility in the way they retrieve E-mail, and LDAP lets users easily view and update directory information using a World Wide Web browser. Outlook 98 also will support HyperText Markup Language E-mail, Microsoft officials said.

The new release shot is expected to be faster and easier to set up than previous versions.

Microsoft officials promised a simpler user interface that includes a new search tool. There also will be a tool that helps users create mail folders. — Barb Cole-Gomolski

ADD-ON PRODUCT PARADE

Microsoft last week announced the following add-on products for Exchange:

Company	Product
Eastman Software	WorkFolder and Document Manager for Exchange
Trend Micro	ScanMail 5.0 for scanning the contents of Exchange public folders for viruses
The MESA Group	Application Assessment and Planning Server for analyzing Notes applications that are being migrated to Exchange

Microsoft shift may hurt CORBA

By Sharon Gaudin

MICROSOFT CORP.'s recent moves toward cross-platform support could take a little steam out of the swelling momentum building behind CORBA.

Microsoft, known for its proprietary focus, this week will release Component Object Model (COM)-based data access components that will help developers build applications that can more easily access information from a variety of databases — even if they aren't sitting on a Microsoft server (see related story, page 64).

Somewhat users said that could be a blow to the industry-standard Common Object Request Broker Architecture (CORBA), which has gained much of its market share and user share from easily connecting new applications to the company's legacy databases. Even Bill Hoffman, the new president and chief operating officer at Object Management Group (OMG) in Framingham, Mass., said Microsoft's enhancements

will make CORBA a harder sell.

"I think it most likely will factor into our decision," said Mary Kratz, special project coordinator at the University of Michigan Medical Center in Ann Arbor. Kratz said she is trying to decide whether to pick up CORBA to integrate front-end applications to legacy applications and databases.

"We have all these legacy applications with data locked in them. Every time we need that data, we have to go back to the vendor and ask for an application. That gets expensive fast," Kratz said. "COM didn't give us much functionality to get to the back end.... I will take another look at COM now."

ABOUT THE STANDARDS

CORBA is an industry-standard architecture that serves as a technical bus that hauls information between applications and databases, connecting them and enabling them to communicate regardless of the platform.

Microsoft's COM is a client-side architecture that connects

Windows-based applications.

David Lazar, lead product manager for Microsoft's visual tools, said the data access components released this week can be used with the tools until they are added directly to the tool packages in the next versions. They were designed to enable applications to access disparate databases.

The components are OLE DB, Active Data Objects (ADO) and Open Database Connectivity (ODBC).

ADO is a high-level programming interface that makes it easier to set up the access channels. ODBC is a lower-level connection technology that can access data on various databases. Although OLE DB does the same thing, it also gives access to nonrelational data sources such as object-oriented databases and mainframe flat files — previously inaccessible through ODBC alone.

"It could be a big blow for CORBA," said Karen Boucher, vice president at The Standard Group International, Inc. in



Concrete Solutions' Isaac Appelbaum: COM may be more desirable, but it still doesn't offer enough scalability

Dennis, Mass. "To battle it, the OMG is going to have to come out with an easier way to do database connections with CORBA.... One thing about war is that it's good for the customer."

Isaac Appelbaum, president and CEO of Concorde Solutions, the information technology subsidiary of Bank of America, said

the enhancements make COM more desirable, but it still doesn't offer enough scalability. "We're rolling out a CORBA-based application that will support 5,000 concurrent sessions on the Internet and 500 hits a minute. Our thought is that it wouldn't be double with COM," Appelbaum said. □

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FRANKLY SPEAKING

Guess what the IRS wants now?

FRANK HAYES

DID YOU KNOW that the Internal Revenue Service — with all its other troubles — has developed an unnatural interest in your source code?

Yes, that IRS. The IRS that just more than doubled the estimate for its own year 2000 fix from \$500 million to \$1.1 billion, the IRS that suffered two recent systems upgrade attempts, the IRS that couldn't account for \$113 billion in accounts receivable because of fouled-up computer systems in a 1995 audit.

That bunch of IT headhounds now wants to include source code in the documents it examines when it sifts through your company's books during a tax audit. That is part of the "books, papers, records or other data" it can demand for determining the correctness of your company's tax return under Section 7603 of



the Internal Revenue Code.

Why does the IRS now want source code — which virtually none of its auditors will be able to make heads or tails of?

"In order to be able to verify the return," said an agency spokeswoman.

And it isn't just your home-grown source code the IRS is interested in. It's also demand-

The IRS just wants your source code — and claims it can take it.

ing source code from software vendors.

For example, the IRS is now fighting over source code with Computer Language Research, Inc. (CLR), a Carrollton, Texas-based tax software vendor. CLR isn't being audited, but some of its cus-

tomers are — so the IRS is demanding that CLR turn over its source code as part of those audits.

Not surprisingly, CLR doesn't want to hand over all its trade secrets and technology tricks to the IRS or anyone else. So the vendor is in court in Dallas and Chicago, fighting a fistful of IRS summonses.

Now, understand: The IRS doesn't need that source code to trace the numbers from balance sheet to tax return — the software generates worksheets for that. Nor does the IRS believe the software is buggy, or want specific questions about it answered. The IRS just wants the source code — and claims that under Section 7602, it can take whatever it wants.

And since 1994, when it first started going after tax preparation software source code, the IRS has expanded its demands. Next, the IRS is expected to demand source code for accounting systems, which are at least as crucial to confirming a tax return's numbers as tax software.

That means if your company is audited, your tax shop may find itself hip-deep in some very unpleasant muck.

What if the mighty drame source code for your custom accounting systems

is written in a mix of programming languages, and the IRS doesn't have the expertise to make sense of it?

What if you can't find all the source code for your accounting systems? Or worse, if the source doesn't actually match the system you're running?

What if you've moved to some newfangled systems like SAP R/3 and that big German vendor refuses to turn over its source code to the American tax agency? What if your vendor has gone out of business and the source code isn't available? What if that vendor refuses to turn over its source code and your tax audit gets kicked into a corner while the vendor and the IRS slug it out in court?

What can you do? Talk to your company's legal staffers — make sure they know the situation. Talk to your software vendors and nail down agreements for what will happen if the IRS demands their source code. Call your congressman. Find your source code. And do it now, before the IRS shows up on your corporate doorstep with a summons.

Because if you thought 2000 was the number to drive you crazy, just wait till you see what 2040 can do. □

Hayes is Computerworld's West Coast bureau chief. His Internet address is jhayes@cw.com.

SHORTS

Microsoft swats Excel bug

Microsoft Corp. is advising Excel 97 users that the spreadsheet may fail to recalculate cells under obscure conditions. A patch should be posted within days. The work-around will force Excel to recalculate all cells by pressing Ctrl-Alt-F9. More information about how to reproduce the error is available at www.microsoft.com//officetech/.

Court supports spam king

Spam king Sanford Wallace got another chance last week when a U.S. District Court judge ordered an Internet service provider to reconnect his Internet direct-mail business to its network until at least Oct. 16. The judge said Apex Global Internet Services, Inc. (AGIS) in Dearborn, Mich., violated a 30-day termination clause in its contract with Wallace's Cyber Promotions, Inc., when it cut off the company on Sept. 16 without notice. AGIS said it terminated Cyber Promotions because it believed a massive ping attack against the network was a protest against Cyber Promotions.

Netscape betas proxy server

Netscape Communications Corp. this week will ship the beta for Proxy Server 3.5, the latest version of its software for caching and filtering World Wide Web content. The new version includes support for Lightweight Directory Access Protocol 3.0 and a security feature that lets it sit outside the firewall and point traffic to the Web server inside the firewall. The final version of Proxy Server 3.5 is due by year's end. It will cost \$250.

McAfee blocks hostile applets

McAfee Associates, Inc. in Santa Clara, Calif., this week will announce a server protection product aimed at

blocking hostile Java and ActiveX code from coming in from an Internet connection. WebShield Live can scan outgoing electronic mail for credit-card numbers and key phrases such as "company confidential." The software, which will ship sometime this quarter, will check for a list of known malicious applets. It can be set to block E-mail that contains any phrases in a subject line or message body. Pricing wasn't available.

Mitsubishi ships mini-notebook

Toshiba has a competitor to its ultralight Libretto. Mitsubishi Corp. in Japan will introduce the 2.4-kg. Amity CN mini-notebook by month's end, but it is available now for \$1,999. The Amity CN is a Windows 95-based machine with a 133-MHz Pentium processor, 16M bytes of memory, a 1.35-inch floppy drive and a 7.4-in. color display. The Libretto, which weighs 1.85 lbs. and costs about \$2,000, has a 75-MHz processor and a 6.1-in. display.

NC gets office suite

Network Computer, Inc., an Oracle Corp. subsidiary that makes server software for network computers, has announced it will bundle a suite of office productivity applications from Star Division GmbH in Hamburg, Germany. The StarOffice 4.0 suite includes Web-enabled word processing, spreadsheet, presentation graphics, E-mail, news, charting and graphics applications.

Zona gives Explorer the edge

Zona Research, Inc., has released a browser census indicating that Microsoft Corp.'s Internet Explorer commands a 36% market share — up from 30% 18 months ago. Netscape Communications Corp.'s Navigator is still the leader with 60% market share, according to the poll of 239 enterprises. But according to Zona research,

many enterprise users switched to Internet Explorer because it is embedded in Windows 95 and because of Microsoft's aggressive action as the partnership front.

PointCast ships update

"Push" news and information vendor PointCast, Inc. today plans to announce that Version 2.0 of its desktop client can be downloaded free from www.pointcast.com. The new version is a 32-bit application for faster throughput. It will let companies build custom channels that can be viewed by employees or business partners. Other design changes cut bandwidth use by 55%.

Data warehouse tool ships

MicroStrategy, Inc. in Vienna, Va., this week plans to announce a promised upgrade of its DSS Server analysis software that lets users pull subsets of information out of data warehouses. The server could be set up as departmental data marts or downloaded to end users who want to do analysis while disconnected from the MicroStrategy server. DSS Server 5.0 is due to ship this month on Windows NT 4.0 servers. Pricing will start at \$27,500 for 20 users.

SHORT TAKES: Intel Corp., in Santa Clara, Calif., has agreed to acquire Corel Corp., Inc., in Irvine, Calif., which makes high-performance eight-processor servers using Intel chips. ... Hauppauge/Commodore Home Systems Ltd. has introduced Common Ground Internet Edition, a tool for converting any Windows document into a Java program that can be viewed using a Web browser. It is available free at www.hauppauge.com/cgi/cgi... ... Informix Software, Inc. in Menlo Park, Calif., announced plans to bundle object-request broker software for Java and C++ from Visigenic Software, Inc., in San Mateo, Calif., with its database management tools.

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Internet provider fights off attack

By Stewart Deck

A USUALLY quiet communications server at Clark Internet Services suddenly got very active two weeks ago.

It was the beginning of an attack that

eventually led to an embarrassing breach of security for an online mailing list of security specialists who use the Internet service provider.

Over the next week, Columbia, Md.-based Clark Internet danced a disquiet-

ing tango with a shadowy figure hacking in to its network.

Detecting the first phase of the hack was just the "dumb luck" of hearing the quiet server spring to life, said Jeremy Hartman, director of systems and net-

works at Clark Internet.

A quick glance at the service provider's LAN traffic records showed that a hacker had broken in to the network through a fast string of attacks on other servers.

"At that point, we changed the filtering on our firewall so that nothing could get through," Hartman said.

But then the service provider realized it needed to reopen the network — carefully monitored — so it could collect evidence. "You shouldn't go to the law authorities without enough detailed information," said John Cibos, president of The Intranet Institute, an industry advisory group in Bethesda, Md. The institute became involved in the case as a customer of Clark Internet.

A quick response to a hack is crucial to discovering the culprits. "Make sure you have procedures in place about who is contacted, who is in charge, who the security contacts are and what data needs to be recovered immediately."

— Michele Crabb, Cisco

Five days later, the hacker slipped in to Hartman's personal PC files. Then last Monday, the hacker broke in to The Intranet Institute's security newsletter mailing list and mailed out a nose-thumbing pornographic bulletin to thousands of subscribers.

On his way out of the system, the hacker corrupted the entire log filing system, covering his tracks.

"I can't be 100% sure how they got in," Hartman said. "They were able to access a [backup] machine on one of our networks somewhere and sniff some passwords out. We still don't know exactly what machines were compromised."

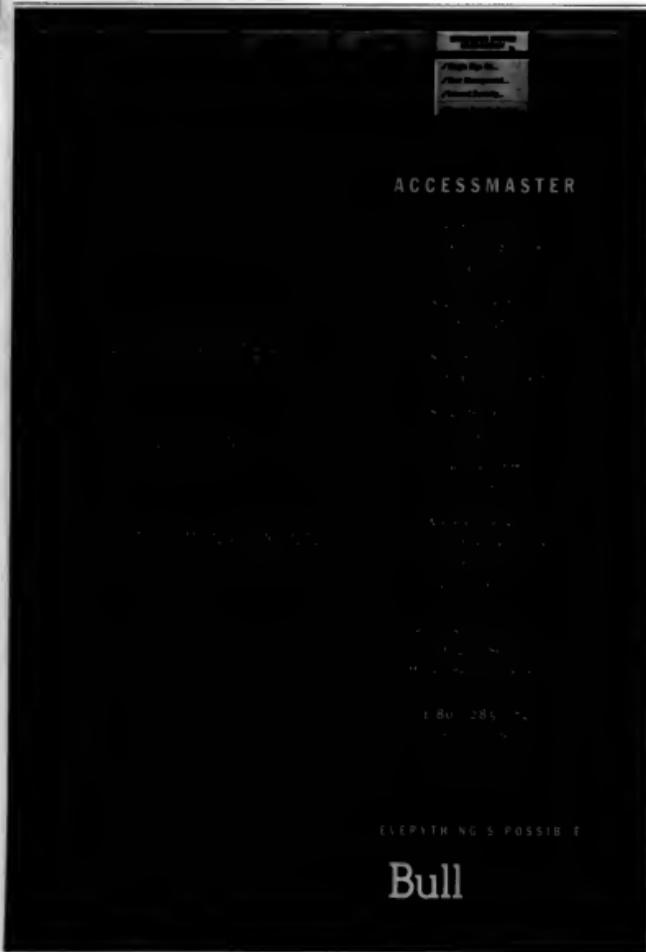
A quick response to a hack is crucial to discovering the culprits, said Michele Crabb, a network security specialist at Cisco Systems, Inc. in San Jose, Calif. Crabb works closely with law enforcement officials.

"Make sure you have procedures in place about who is contacted, who is in charge, who the security contacts are and what data needs to be recovered immediately," Crabb advised. "Less than 50% of the network people we talk to have such procedures in place."

Hartman did have a plan and quickly contacted the Computer Emergency Response Team (www.cert.org, followed by the FBI) because pornography was involved) and other authorities.

The Intranet Institute sent electronic mail to its subscriber list, explaining that its list had been hacked and that authorities were investigating.

As of press time, no charges had been filed in the Clark Internet incident. □



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USER GROUP UPDATE

SIM tries new tactics to add members

By Thomas Hoffman
BOSTON

FACING FLAT-OR-DECLINING membership, the Society for Information Management (SIM) International is betting on a youth movement and new programs to keep it from collapsing like other trade associations have in the past year.

Several factors have contributed to SIM's problems. Corporate mergers and acquisitions have sliced its membership rolls, and the year 2000 problem has stolen time from information systems executives, said

James R. Kinney, president of the 39-year-old information technology leadership organization based in Chicago.

Its annual conference, SIM Interchange '97, held here last week, attracted slightly more than 400 of its 2,700 members, roughly the same as last year.

OTHER GROUPS AFFECTED

SIM isn't alone. Many industry associations have been crippled by declining membership, such as the Association for Systems Management (ASM) [CW, May 6, 1996].

ASM has since splintered into

a handful of independent chapters, said Ann M. Purz, former international president of ASM who joined SIM's executive advisory council last week.

Declining membership and attendance at events are causes for concern, but cash flow isn't.

SIM has doubled its revenue in the past three years to about \$3.5 million, and expenses have nearly reached that figure, said Steven A. John, executive director of the group.

It did so through expanded programs and services, such as a year 2000 study published last November by University of North Texas Professor Leon Kappelman. That study poured \$20,000 into SIM's coffers.

SIM has been able to grow its web chart by 5% since 1994, said John, who declined to specify how large the fund is.

MEMBERS NEEDED

But revenue isn't enough; SIM needs members. To jump-start its growth, the association has doubled the number of working groups in the past three years. Those self-directed teams are composed of 10 to 15 IT professionals who select a topic that

SIM has doubled its revenue in the past three years to about \$3.5 million, and expenses have nearly reached that figure.

- Steven A. John,
executive director, SIM

has a high impact on their organizations and the IT industry, such as the year 2000 issue.

For example, René DeGeorge, leader of a SIM working group attempting to measure the business value of IT, is just the kind of newcomer SIM needs.

The same age as SIM, the 30-year-old IS planning manager works at Elf Atochem North America, Inc., a Philadelphia-based chemical manufacturer.

The working group has enabled DeGeorge to "know a little bit more" about the return-on-investment criteria that her

company's chief financial officer looks for from technology investments. "Standing around and watching others be involved in user associations doesn't do me any good," she said.

To bring in more members, SIM in 1993 launched a program called the Regional Learning Forum, an intense, nine-month course designed to groom future IT leaders.

So far, the forum has generated 350 graduates, all of whom were offered one-year membershipships in one of SIM's 31 regional chapters. □

Corporate mergers and acquisitions have sliced membership rolls, and the year 2000 problem has stolen time from IS executives

James R. Kinney,
president, SIM

Vendors trade jabs in browser battle

► *Netscape, Microsoft tout Web-to-PC integration, but many aren't interested*

By Carol Sines

MANY CORPORATE USERS aren't exactly champing at the bit for the key new browsing technology that has Microsoft and Netscape wrestling: a consistent interface for navigating both hard drives and the World Wide Web.

Microsoft Corp. has insisted for more than a year that browser/operating system integration will make it easier for users to access and use information, whether it resides on the PC or the Internet. Last week, the Redmond, Wash., software giant finally shipped the Internet Explorer 4.0 browser, which provides the Active Desktop and shell integration functionality on the Windows 95 and NT platforms.

Not to be outdone, Netscape Communications Corp. unveiled its own Web-to-PC integration feature, code-named Aurora, due in the middle of next year. Aurora will give users

a single interface for viewing files from their hard drives, electronic mail and Web pages.

USER CONCERNES

Although users acknowledge that the consistent browser interface may represent the wave of the future, many are hesitant to take the plunge, fearing their users aren't ready for yet another interface change or skeptical about the business need for it.

"We haven't seen a demand for that," said David Leong, Web systems integrator at Sandia National Laboratories in Albuquerque, N.M. "I really don't think users are thinking that way."

Leong also has security concerns. "People want to know when they've left our intranet and they go to an external site," he said. "So if you blur the distinction between a local file to your hard drive and to the Internet, I think it's just going to be more confusing than anything else."

Even many IT professionals who are interested in the new feature aren't losing any sleep.

Larry Bolnick, manager of corporate information systems at Jeppesen Sanderson, Inc., an aviation information supplier in Denver, is tired of the tit-for-tat browser sparring.

"My take on this whole thing is: I really don't want to be in the middle of the people struggle of the super-computer people," Bolnick said. "I've got pretty, 'We have this, and they don't.' Then next week, they've got it."

Bolnick, whose company deploys Netscape's browser, said training 1,000 users after a major new change can be "a long, drawn-out process."

Even many IT professionals who are interested in the new feature aren't losing any sleep.

"When we're more

Web-based with everything, that's probably the right paradigm," said Sandy Sully, chief information officer at Xilinx, Inc. in San Jose, Calif. "It's just not high on my list right now."

Bectel Corp. in San Francisco likes the idea of Microsoft's consistent interface as a means to simplify navigation for end users, according to technical manager Erik Innes.

Explorers' Active Desktop will let the company customize user interfaces to meet business requirements through the cre-

ation of a Hypertext Markup Language background page with a variety of components on the desktop that can push internal company information, Innes said.

But before Bechtel deploys those features to more than 30,000 users, the company plans some heavy testing. The beta period wasn't problem-free, and two cases in particular gave the company cause for concern, Innes said. One desktop lost its applications, which had to be reinstalled from scratch, and another lost network access.

"We have to look at the unique circumstances there, but [Internet Explorer's] not totally innocent. Obviously, it gets pretty deep in the system," Innes said.

Internet Explorer gives users the option to turn off any features. Microsoft officials noted. So companies may elect to disable any that are deemed unsuitable. □



Microsoft pranksters last week dumped a gigantic Internet Explorer logo on rival Netscape's front page. Netscape responded by positioning its Mozilla mascot, thumb pointing skyward, on top.

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Is this a great time, or what?



Feds call IT labor emergency

CONTINUED FROM COVER 1

get tighter. In the next seven years, U.S. companies will require more than 1 million new IT workers, according to the Commerce report.

Demand will be highest for systems analysts, whose ranks must swell by more than 50% to fill 928,000 jobs in 2005.

Computer programmer jobs are projected to grow at a faster rate — about 18% between now and 2005.

HELP WANTED

Earlier this year, by comparison, the Information Technology Association of America in Washington identified 190,000 unfilled IT positions at large and midsize companies.

Rising salaries are another sign of a growing IT labor shortage.

RIPLER EFFECT

Severe shortages of IT workers are ...

- ... driving up IT salaries by 15% to 20% annually
- ... squeezing government and nonprofits out of the competition for talent
- ... delaying development of leading-edge products, including exports

age. Between 1995 and 1996, the average hourly compensation for software architects rose by 20%, according to a survey conducted by William M. Mercer, Inc., a compensation consultancy in New York.

At a press conference last week, several government officials characterized the IT labor shortage as nothing short of a national emergency.

"Since information technologies affect every sector and industry in the U.S., severe shortages of workers could undermine U.S. innovation, productivity and competitiveness in the global market," said Commerce Secretary William M. Daley.

Sen. John Warner (R-Va.) went so far as to label the shortage "a national security issue."

"We're in a world market for the survival of our life," Warner said.

To address the issue, government, academic and industry representatives have formed six



Libbey "didn't receive one response" to an ad for application people, says CIO John Zarb

task forces to study various causes of the shortage and recommend strategies for bolstering the ranks of IT professionals. One group will even focus on ways to change the popular image of an IT professional as that of a socially inept geek.

The six study groups will present their findings at a national IT workforce convocation to be held in January at the University of California at Berkeley.

In the meantime, several companies are focusing on developing fresh IT talent through innovative career information and training programs never before available.

WIDESPREAD OUTREACH

Later this month, Microsoft Corp. will kick off a career expo blitz across 17 cities to help its certified resellers find the talent to fill more than \$80,000 open positions. The software giant also has donated instructional software to 86 high schools and a senior citizens agency to pre-

Finding a silver lining

Complete Business Solutions, Inc. (CBSI) is taking a business-to-business approach to the IT skills shortage. The payoff: at least \$1 million.

That's what the Farmington Hills, Mich., systems integration company expects to earn this year from a new external training and job placement program for entry-level computer programmers.

"We've always trained employees with computer science degrees in the free-time of industrial programming," said CEO Raj Venkatesh, now, "we are turning a cost center into a profit center" by selling the same training to outsiders, he said.

Since December, CBSI has trained about 200 technical workers, and it subsequently hired several of those people to work on year-end and other IT projects.

Now it's taking its training programs on the road, offering classes in Cobol programming and other mainframe skills in Illinois, Ohio and South Carolina. Tuition for the 10- to 12-week courses ranges between \$1,000 and \$2,000, depending on location.

To place the new recruits after graduation, CBSI has teamed up with Management Recruitment International, Inc. in Grand Rapids, Mich., and Strategic Business Consultants International in Canton, Mich. The firm will pay CBSI \$10,000 for each CBSI-trained student they place in a job.

CBSI officials said the plan is to eventually branch the training operation, which could grow into as much as a \$20 million business for the company. — Julie King

pare teenage students and older workers for careers as Microsoft technicians.

Also in production is a film about Microsoft technology careers that will be shown in hundreds of employment offices around the country.

Accustaff IT, a nationwide IT consulting company in Jacksonville, Fla., is offering its 7,000 employees free training in hot technologies, including Java

programming, SAP AG's R/3 applications software and Oracle Corp. database management systems.

So far Accustaff officials said, the company has invested about \$1 million in the training, which employees can access anytime via a companywide intranet. □

& Hardworking skills are hot; NT skills are searching.
Page 102

IS risks shaky vendors for right fit

CONTINUED FROM COVER 1

server applications to take over its mainframe-based financial and manufacturing systems next year.

But Informix's problems were only "a minor factor" in the evaluation, said Jerry Bull, chief information officer at Clark. They were outweighed by Informix's tight ties with Baan — and by the nice deal Clark was able to get from the beleaguered Informix.

Three months later, Bull still isn't flinching despite a steady run of bad news from Informix. "They'll either survive or they won't, but we think we'll be taken care of whatever happens," he said. "Informix is too big an operation to just disappear and leave us stranded."

Informix, in Menlo Park, Calif., is the latest poster child for vendors in trouble. Others in the crucible or there recently include Apple Computer, Inc.

Banyan Systems, Inc. and Sybase, Inc. Most new customers stay away from such vendors, but Bull and a half-dozen other users interviewed last week said they were willing to take a calculated risk.

Even if a vendor isn't at the

zenith of its financial strength, a good fit of technology and business need is hard to pass up, the users said. Most didn't even feel the need to build any special protective mechanisms into their contracts.

Chances are that established

FOOD FOR THOUGHT

Prospective users evaluating whether to contract with a struggling vendor should determine:

- How much their application depends on features still being developed
- How quickly their business would be affected by development delays
- Whether another vendor involved in the deal will help if problems arise
- How easy it would be to move the application to another product

SHANE HOWARD GROUP, INC., NEWTON, MASS.

products with big installed bases will find new homes if their original owners go bust, they said. And open systems technology has fueled a belief that it won't be too onerous to switch vendors if necessary.

Then there are the low prices that can be bid out of vendors hungry for sales.

"Sybase really wanted to get a deal done, and they were not bashful about it," said Jim Dilco, senior vice president of enterprise support services at Private Healthcare Systems, Inc. in Waltham, Mass. Private Healthcare, a managed-care services company, agreed last spring to use Sybase's database and development tools.

Sybase already had returned to the black after three straight quarters of losses last year, and the managed-care application that Private Healthcare wanted was available only on its database. But the Emeryville, Calif., database vendor was put through the wringer before the deal went through, Poole said.

"This was a departure from

the norm for us, and we wrestled with it," Poole said. Over a week's worth of meetings, Sybase laid out short-term and five-year plans and gave Private Healthcare's 15 managers a list of other customer prospects so they could see "if we were the only fish out there," stabbing at the vendor's butt, he said.

The MacMansus Group, an advertising and public relations firm in New York, had similar doubts in mid-1996 when Sybase was in the midst of its losses. "But at the end of the day, it came down to faith in their management," said Jim Dilco, senior vice president of worldwide information technology at MacMansus.

Dilco and his staff met with senior executives, regional managers, product developers and financial people at Sybase over a three-month period before signing on the dotted line.

So far, his faith has been rewarded: Sybase has turned in three straight profitable quarters, although sales have stayed flat. □

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NETWORK/INTEROP '97

Users look to 'net to cut WAN costs

By Bob Wallace

FACED WITH bone-crushing pressure to cut WAN costs and demands to support remote users and business partners, IS managers are looking wistfully at the Internet as a cheaper and easier alternative to running their own networks.

The answer for some is a Virtual Private Network (VPN), which provides a set of private links through the Internet for corporate traffic. A few Internet service providers offer VPNs; many more are expected to follow.

VPNs can be used to let remote users gain access to corporate resources, to link with business partners as a less expensive alternative to electronic data interchange or to replace existing wide-area networks.

At Network/Interop '97 this week in Atlanta, 3Com Corp. and Siemens Corp./Newbridge Networks Corp. will demon-

strate equipment that Internet providers and carriers need in order to offer VPN services.

It is rumored that AT&T Corp., MCI Communications Corp. and IBM, which already have VPN equipment embedded in their networks, soon will offer VPNs.

VPN VOYAGE

"We'll be looking at VPNs in about a year for flexibility in more quickly adding sites here and internationally, communications with other companies and cost savings," said Troy Kent, a senior information technology specialist at Energy Services, Inc., a regional utility in Greene, La., and JCom shop.

"We expect we can save a minimum of 50% by going with a VPN instead of a new leased-line network," Kent said. Energy will use the VPN to support remote workers.

The VPN won't replace Energy's core network in the near future. "We don't yet feel we can count on the Internet for mission-critical applications," Kent said.

Experts said companies initially will use VPNs to support remote users. That's because information systems managers are anxious to outsource this application, which isn't considered as critical as other core applications.

"Standardized tunneling and security should be set by mid-1998, which will set the stage for remote access applications."

said Dan Merriman, an analyst at Giga Information Group in Cambridge, Mass.

"Users with applications that require strict performance predictability will come on in 1999 and 2000, because that's when the Internet will become reliable enough," he said.

Anthony Patrone is looking to VPNs to support remote users who currently dial in to a nationwide toll-free number for networking access.

"We expect we can save 30% to 40% by replacing the 800-number, which carries a steep cost, with a VPN," said Patrone, manager of the New York City network at Reuters America, Inc., a JCom shop. "Our employees use their computers to remotely demonstrate the products that we sell to potential customers."

Deb Mielke, an analyst at TeleChoice Inc. in Verona, N.J., said users need to decide before they opt for a VPN who will handle technical support for remote users. □

VPN checklist

- Access line and equipment
- Tunneling protocol (establishes links across the Internet)
- Authentication server
- Encryption (such as IPsec)
- Directory services (to help remote users find contacts)

Source: TeleChoice Inc., Verona, N.J.

RELATED LINKS

- For those and other related links, point your browser to: www.computerworld.com/links/gzreader/prefiles.html
- VPN Checklist
www.3com.com/products/interconvg.html
- Glossary of Virtual Private Network terms
www.3com.com/products/vpn/glossary.html

Novell unveils NDS package for Win NT

By Laura Di Dio

NOVELL, INC. said it will finally unveil its unbundled Novell Directory Services (NDS) for Microsoft Corp.'s Windows NT at this week's Network/Interop '97 trade show in Atlanta.

The Novell connectivity package will let businesses manage their mixed NetWare and Windows NT networks as a single entity. NDS for NT is the only product thus far that lets companies centrally administer both products via the NDS directory.

Although Novell officials declined to provide any details,

three beta-test users and analysts familiar with the software said the Provo, Utah-based firm has expanded the capabilities of the product to support Microsoft BackOffice applications.

AUTOMATION

According to Bob Sakakeeny, an analyst at Aberdeen Group, Inc. in Boston, a business with multiple Microsoft Exchange Messaging Servers in various locations must manually synchronize the NT domain directories.

Using the NDS for NT will let administrators automatically add, delete, change and syn-

chronize directories from a central console, he said.

An information systems manager at a large Southern oil company who requested anonymity, said the NDS for Windows NT beta package has "halved" his administrative time on test networks. "It's been a godsend. We have lots of Windows NT in our remote offices, and prior to this, there was no way to easily monitor and manage them," he said.

"It's awesome and just what I've been waiting for," agreed Matt Rice, a senior network manager at USTrust Bank in

BANDWIDTH MANAGEMENT BARRAGE

Vendor	Product	Type
CheckPoint Software	FireGate	Firewall add-on or stand-alone
Packeteer	Packet Shaper	Stand-alone
Utah Software	TrafficWare	Firewall add-on or stand-alone
Structured Internetworks	iPath/IOM	Stand-alone
Starting price: \$2,800		

Bandwidth management

CONTINUED FROM COVER 1

The systems can take the form of software add-ons for security firewalls and routers, or they can be single-purpose stand-alone systems.

The packages, which will be demonstrated this week at Network/Interop '97 in Atlanta, let information systems managers set policies for governing Internet access. Managers can allocate bandwidth by user or application.

BANDWIDTH SAVER

"We had a massive news feed that at times consumed our entire T1 line to the Internet," said Gary Regan, director of engineering at Macnica, Inc., a San Jose, Calif., provider of computer equipment to companies in Japan.

The firm installed a bandwidth management system from Packeteer, Inc., in San Jose. "We programmed the system never to let that feed exceed 128K bits/sec. That saves bandwidth for other uses," he said.

As a result, Macnica can avoid buying additional T1 access lines, which cost several thou-

sand dollars per month. "That's where the savings is, in cost avoidance," Regan said. "And at \$7,200, the system pays for itself very quickly."

The bandwidth management system also lets users see what goes across their access lines.

"Eighteen months ago, our management became very concerned about how widely PointCast was being used, with the perception being that it was choking our line," said Sheryl Osgun, a network manager at Harris Corp. in Melbourne, Fla.

Special network monitoring equipment was used, and a time-consuming analysis was done before her group determined that "push" content from PointCast, Inc., in Cupertino, Calif., accounted for only about 5% of the total bandwidth.

"We could have used a bandwidth management system to address management's concern much more quickly," Osgun said. "But there weren't any available then."

Osgun said she is interested in the systems' prioritization features.

"Bandwidth management products could provide a huge benefit for us and other firms because they let you prioritize by traffic type," she said. "I could, for example, give the highest priority and most bandwidth to business E-mail and access to our intranet and a much lower priority and less bandwidth to news feeds and PointCast."

Another approach used by Packeteer is winning praise from analysts.

Rate Control is a protocol that runs over TCP/IP and controls the rate at which end systems communicate to provide better performance over the network, said Tom Nolle, president of CIMI Corp., a consultancy in Voorhees, N.J. □

NETWORLD/INTEROP '97

Reliability issues stalk client/server

By Patrick Dryden

TWO NEW SURVEYS highlight the big problems IS managers still face when trying to build and maintain client/server networks at the reliability levels demanded by business users.

Distributed client/server systems still aren't as reliable as mainframes, and the performance of routed networks remains unpredictable, the surveys found.

That explains why an estimated 45,000 information systems professionals will be in Atlanta this week searching for answers at Networld/Interop '97.

"They seek help shifting from the old style of fault management — is the box broken or the network congested — to the new demand for stable, predictable service," said John McConnell, conference adviser and president of McConnell Consulting, Inc. in Boulder, Colo.

Greatest barriers to improving network performance management capabilities

Justifying costs/benefits to upper management.....	49.75%
Experience of staff/training required.....	48.7%
Inadequate manpower/staff turnover.....	47.76%
Product capabilities vs. requirements.....	44.83%
Determining performance management requirements....	40.89%

Based on 15 organizations; multiple responses allowed.

Source: International Network Services, Inc., Sunnyvale, Calif.

Mainframe-oriented sites reported fewer outages from security breaches and operating system errors, less downtime and better recovery mechanisms from outages. So says a joint study by Arthur Andersen, International Data Corp. and the Merit (Maximizing the Efficiency of Resources in Information Technology) Advisory Council.

In the Merit Project, founded by Computer Associates International, Inc., CA users and vendor partners attempt to define common problems that can be solved through better management tools.

Seven out of 10 mainframe sites were able to achieve at least 99.5% uptime, but only half of client/server environments could do so, according to the Merit study.

Downtime costs more than \$10,000 per hour for 40% of the 1,850 IS officials surveyed. A few of the respondents said downtime costs a whopping \$1 million per hour for their organizations.

More than half the 200 network managers surveyed by International Network

Services, Inc. (INS) said they were dissatisfied or very dissatisfied with their ability to establish and manage service-level agreements that guarantee performance

of network delivery for their users.

Tools for measuring network performance are scarce or inadequate, most respondents told INS, which is a network

integrator and service provider in Sunnyvale, Calif.

But people and politics seem to be the greatest barriers to improving performance management capabilities. More network managers said problems such as staff expertise and justifying costs to upper management create more trouble than implementing the available tools. □

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Users slow to accept scalable server standard

► Sequent scores with NUMA; will others follow suit?

By Jay Kumar Vijayan

IN THE YEAR since Sequent Computer Systems, Inc. announced computer systems based on Non-Uniform Memory Access (NUMA) technology, several major corporate users bought NUMA servers as a low-cost mainframe alternative.

But a lack of widespread vendor support for NUMA could slow acceptance of the technology during the next few years. Sequent is still the only vendor that ships NUMA systems in volume.

NUMA lets users scale applications far beyond the limits imposed by current symmetrical multiprocessing (SMP) technologies. The scalability is required for running large database and online transaction processing applications.

PICKING UP THE BALL

"In a sense, NUMA takes up where SMP leaves off," said James Gardon, an analyst at Technology Business Research, Inc. in Hampton, N.H. "But unless more vendors support it as a standard, NUMA could end up being an orphan technology."

Data General Corp. in Westboro, Mass., announced NUMA systems earlier this year but has only recently started to ship the systems.

Sequent last week became the first vendor to demonstrate a 32-processor NUMA system that runs an Oracle Corp. database application on Windows NT.

-So far, Sequent claims to have sold 300 of the servers at prices ranging from \$50,000 to \$4 million.

NUMA REPORT CARD

Installations: 300
Major customers: Boeing, Ford, Millipore, Oxford Health
Total installation price: \$500,000 to \$2 million
Latest feature: Windows NT support on NUMA

In the process, the company also racked up some major wins, including a \$105 million contract with The Boeing Co. and a multimillion-dollar contract with Oxford Health Plans, Inc. in Norwalk, Conn.

Despite NUMA's promise, most vendors have resisted moving to the new technology and are playing it safe by focusing on greater SMP scalability.

For some users, SMP is enough.

"Most of our applications certainly don't require more scalability than what we already have" from SMP servers from Sun Microsystems, Inc., said Hugh Alton, manager of information technology at Dunlop Tire Corp. in Amherst, N.Y.

At the low end and midrange end of

the market, NUMA isn't much cheaper than SMP, analysts said.

And the increased scalability that NUMA servers offer usually results in

higher entry-level costs.

"One concern for me is the price of quad in the NUMA space," said Ron Hawkins, director of technology at Millipore Corp., a user of Sequent NUMA servers in Bedford, Mass.

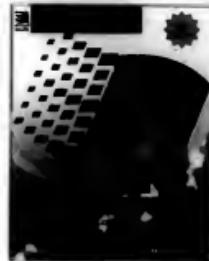
Hawkins welcomed the availability of Windows NT on NUMA, but he said his decision to buy such systems will depend on how well NT scales beyond four processors — and how much it will cost to buy that extra scalability. □

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Fending off NT, Sun and Digital bolster Unix

By Jaykumar Vijayan

WINDOWS NT may be the new religion, but Unix vendors are giving their believers plenty of reason to keep the faith.

Sun Microsystems, Inc. and Digital Equipment Corp. this week will make

announcements designed to extend the reliability, availability and scalability of their respective Unix platforms.

Sun is adding clustering features that will let users scale their systems from workgroup and departmental levels all the way to a high-end enterprise server.

And Digital is releasing the next version of its Unix operating system, which offers new Java and World Wide Web support and more clustering capabilities. Both companies are backing up their performance claims with formal uptime guarantees of more than 99.5% per year

that penalize the vendors if they fail to meet agreed-upon application availability levels.

Although such insurance is extremely costly to buy, it makes sure the vendor picks up the tab in case the guarantees aren't met.

Such features are vital for users who want to run large, critical enterprise applications on Unix boxes, particularly for those who are moving off mainframe environments, said Joyce Becknell, an analyst at Business Research Group in Boston.

MAINFRAME TURF

Sun's announcement "positions its operating system in the same territory that has been traditionally reserved for mainframes" in terms of performance and reliability, said John Webster, an analyst at The Yankee Group in Boston.

Clustering technology's high availability is "something we are most interested in, particularly for applications that interface with our [internal] customers."

— Hugh Allan, Dunlop Tire

Mountain View, Calif.-based Sun's latest enhancements to its Full Moon clustering technology let users link up to four of Sun's Enterprise 10000 servers in a configuration that can support up to 256 processors, 256 I/O channels and 256G bytes of memory. Cluster Server 2.0 software also will come with high-availability, application load-balancing and cluster management capabilities.

Digital is rolling out a faster version of its performance-boosting Memory Channel Interconnect technology and is boosting its TruCluster capabilities to include clustering support for up to eight of its high-end TurboLaser AlphaServers.

GRAND SCALING

The scalability offered by such technologies is vital, said Alan Hubbard, vice president of database service and support at Boston-based Fleet Insurance Group, Inc. The company uses Sun's midrange servers to run a large data warehousing application that Hubbard said he expects will soon contain more than 1T byte of raw data.

"We wanted something that would scale... We looked at [massively parallel processing] servers to run our database, but it was far too expensive from a price/performance standpoint," Hubbard said. The company instead chose Sun's Unix clustering technology.

And the high availability offered by clustering technology is "something we are most interested in, particularly for applications that interface with our [internal] customers," said Hugh Allan, manager of information technology at Sun user Dunlop Tire Corp. in Amherst, N.Y. □

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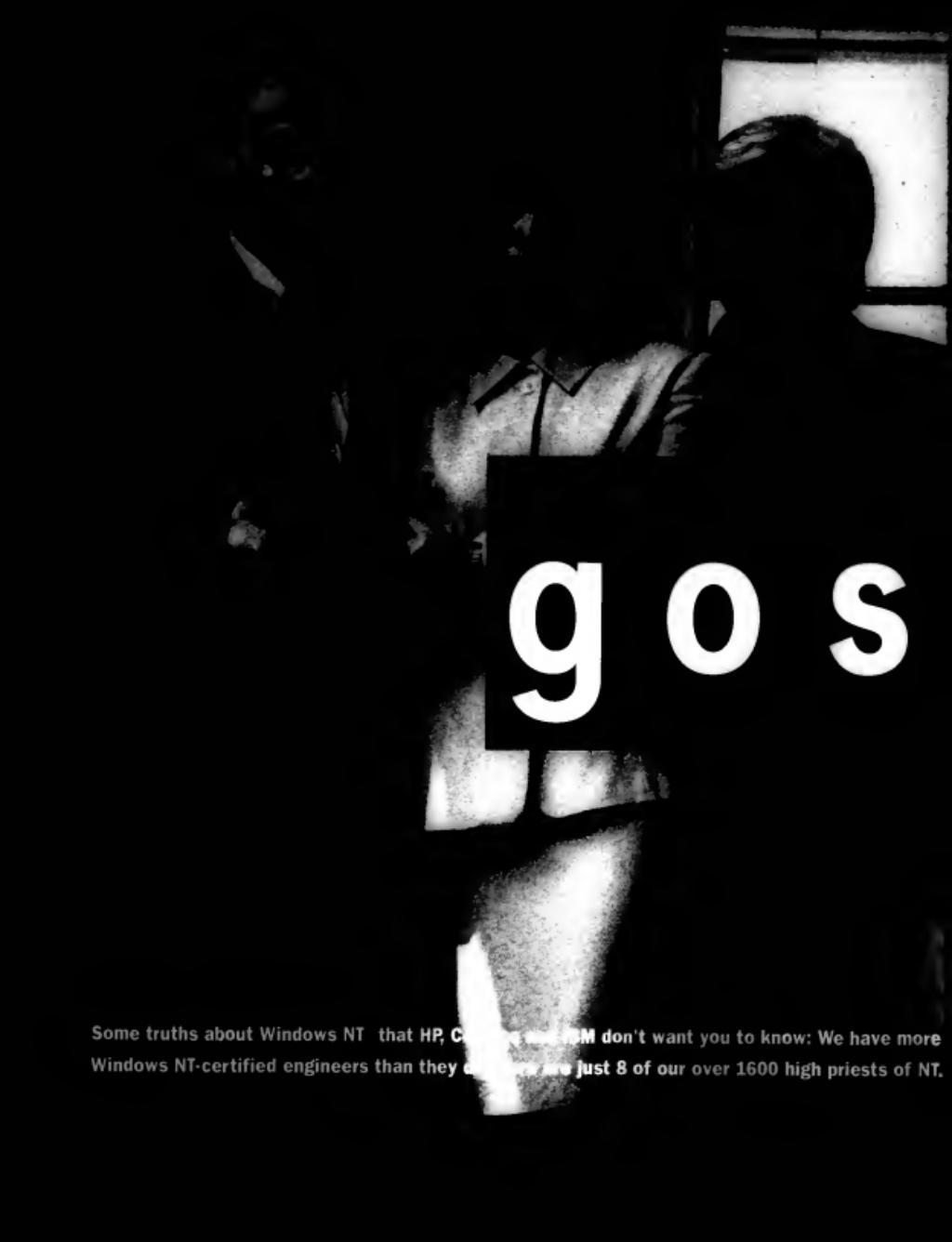
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Net professionals take their work home

CONTINUED FROM COVER 1

Ventures said senior managers needs to warn job applicants about the on-call expectations, watch for signs of job burnout and compensate staff with undisturbed time off. They must also stay involved in the network troubleshooting process.

"We have to know what [network] problem could put us in the dust when the bank branches open in the morning," said James Brown, senior vice president of network operations at NationsBank Corp. in Charlotte, N.C.

That means Brown's pager goes off all night, too. And he was one of 20 information systems staffers — from low-level technicians through executive officers — on the telephone last Christmas Eve at 6 o'clock, dealing with a disruption in the bank system's wide-area network until 5 o'clock Christmas morning.

WHY THEY DO IT

Network caretakers have many reasons for accepting the job's disruption to their personal lives. "My bonus is tied to 99.98% WAN uptime," said Patrick Meyers, a technical consultant at the network center of payroll processor Credant Employment Services, Inc. in Bloomington, Minn.

After-hours duty is a matter of pride for a team of eight at the National Institutes of Health (NIH).

"We built this network, so we're trying to string it along until we get the budget to staff a real network operation center," said Jim Brunetti, network engineering chief at the NIH in Bethesda, Md.

The government won't pay team members overtime to maintain the research network, but it does provide Integrated Services Digital Network lines and computers so they can try to fix faults from home, Brunetti said. Now they rotate the pager among several staffers, after one engineer nearly burned out from spending too many nights and weekends maintaining the network by himself.

Most said they enjoy the challenge of diagnosing and fixing problems.

"I like puzzles," said Murali Kanaga, a senior network engineer at Versant Object Technol-

ogy Inc. in Fremont, Calif. "I'm single, so I can put up with carrying a cell phone and pager. That could drive me nuts, but I take a break and come back because I enjoy playing with all the complex pieces."

Networking is "fun work with fun people. It may get tiresome but it doesn't get old," said David Day, a support specialist at Sulzer Orthopedics, Inc. in Austin, Texas.

OTHERS SUFFER

But full-time responsibility for networks is tough on family life.

The "burden" of pager duty means staying in the area and close to a phone, Brunetti said. "My wife understands that we can't go to the beach on some weekends and that when problems come up, we skip the movie and I may be gone five hours."

Leaving family functions involving children is even harder.

"Whenever the pager goes off, I see that disappointed look on my children's faces, and they ask if I have to fix a fiber cut," said Rick Siegel, an event controller who isolates faults in Sprint's nationwide fiber-optic network.

Children have a tough time understanding the importance of a broken network. Ask Dennis DeMars, technical services manager at Factory Mutual Engineering & Research Corp. in Norwood, Mass.

DeMars said he had to leave his family during vacation at Walt Disney World because highly paid end users "were sniping at God knows how many dollars per hour waiting for the network to come back up." He had to leave his daughter's First Communion party, and he can't coach basketball and soccer teams without first securing a backlog.

Staffers get some sort of compensation for the extra hours, ranging from official "beeper pay" to unofficial time off for the overtime. And supervisors said they watch the staff carefully for signs of burnout or unhappiness with the job.

"If you don't like this type of job intruding on your personal life, you leave after about a year," said Adrian Van Bourgondien, a senior manager of transmission and surveillance at

NETWORK LINGO

Some of the choice terms you may hear in a network operations center:

Buchanan failure: A connection fades out of service, possibly because of erratic bandwidth or backbone.

Bottling meeting: Weekly session where senior business executives grill technical managers about network problems that affected end users.

Billy Buchanan: Anyone who damages transmission lines.

Catastic short: For "catastrophic failure," which network managers don't like to say.

Code 12k: A problem with no clear cause, such as an intermittent failure.

FIBA ("Fiber-beep") Fiber-Splitting Backbone Event, a definite break in a bundle of fiber-optic lines.

Geophase: Loss of a single strand in a wire closet, melted a router, hub and modem down to its metal shell.

Methadone: A serious failure. (At the NIH, the rupture of a steam line in a wire closet melted a router, hub and modem down to its metal shell.)

Snapping you: A clear cause of a problem, such as a carrier failure.



And one you'll never hear:

Ospac: Console operators are forbidden to use this expression, which causes panic among staff and supervisors.

MCi Communications Corp. in Washington

But network managers know what they are getting into and expect to do whatever it takes. Van Bourgondien said: Although staff turnover for IS organizations typically runs at 15%, MCi's turnover rate is only half that figure. He said: "We're lucky our network staff thrives on stress."

Garners and corporations with large IS organizations have the flexibility to count job burnout. They can offer new assignments and easily shuffle a deep staff to balance time spent in emergency efforts.

The situation is different at smaller IS organizations, where all 15 professionals "work 50-to-60-hour weeks and rotate the pager," Day said. But there is one benefit to that approach. The load-sharing means that systems and applications support staffers also learn more about the network. "The cross-training breaks down walls in the group," Day said.

TIME OFF

Maintaining a network around the clock every day of the year is important, but staffers still must have uninterrupted time off and less disruption to their home life, said David Brown, director of network services at The New York Times.

At the Times, the IS department spreads the burden by giving the support desk the tools and ability to handle 80% of network calls and trouble tickets he said. That frees network engineers to deal with tougher problems and development.

Sharing the burden of responsibility is key to keeping networks healthy — and staff happy.

Sprint's director of network management control, Jerry Urey, often is found babysitting employees' children when the parents have to rush back to the network operations center to

deal with an emergency.

Top-level executives also participate in marathon conference calls and all night troubleshooting to support their staff.

As one network manager put it: "There's an old saying in network control centers that if I'm awake, then everyone else should be, too." □

Network managers seek more remote-control tools

By Patrick Dryden

NETWORK MANAGERS attending Networld/Interop '97 in Atlanta this week will seek tools to manage their networks remotely — thus making their homes an extension of the network operation center.

Remote access is a necessity, not a curse, for David Brown, director of network services at The New York Times. When he hops out of bed, he fires up a coffee pot and a laptop computer to start his workday in the kitchen.

Via the Web, Brown checks network performance reports from Concord Communications, Inc.'s Network Health monitoring software. The reports give him a head start, so he can assign engineers to investigate emerging problems before he begins his commute.

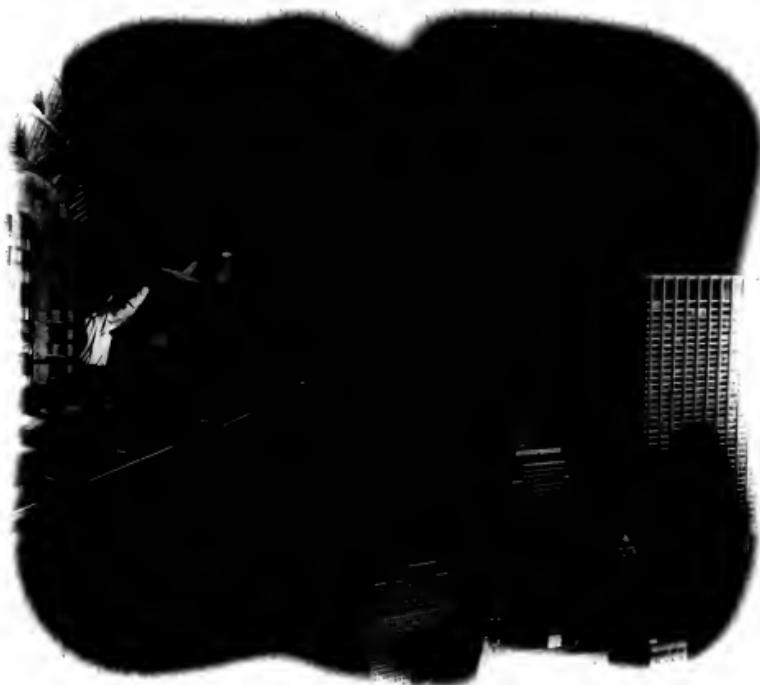
Diagnosing and fixing problems remotely is quicker, easier and less painful than leaving home for the control center at headquarters in Times Square, he said.

Most vendors of management software are making it possible to get network reports and interactive control via the Web. Cisco Systems, Inc., for example, will demonstrate its new Cisco Resource Manager and describe plans to move all of its tools into Web-based Java modules that draw on a common database of network information.

Of course, network managers will have fewer emergency calls if they build more reliability into their networks and replace aging networks. So they will also be shopping at Networld/Interop for tools to cut disruptions.

"You will go crazy patching old cable systems, hubs and disk drives if you don't keep up with technology," said David Day, a support specialist at Sulzer Orthopedics, Inc. in Austin, Texas.

Exhibitors will roll out the latest transmission systems, internetworking gear, servers and monitoring tools this week to overcome faults — and to conserve budgets. □



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PRESENCE; BUT THAT'S
WHEN THE HARD
WORK BEGINS



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EDITOR'S NOTE

South African Bank Solves an Object Puzzle

At first sight, the problems facing Vincent Coetzee, chief technologist at Rand Merchant Bank in Johannesburg, South Africa, are much like those at any other company. He has legacy systems he wants to link to new systems, and he wants to use the Internet to open up data and applications to overseas offices, mobile staffers and customers.

But while for most people a legacy system is one written in Cobol, Coetzee's legacy is a pile of programs written in the object-oriented language Smalltalk and running on Sun Microsystems, Inc. servers.

The oldest programs date

back six years, when the bank first adopted Smalltalk, and for some applications, Coetzee (pictured above) wants to continue using that language. But today he takes a three-pronged approach: Smalltalk to enhance existing programs, C++ for high-performance applications and Java for all client interfaces.

The resulting system, scheduled to roll out later this year to offices around the world, will allow all software to be generated and maintained from the Johannesburg headquarters, while providing Rand Merchant Bank staffers and customers with access to the

view

TRENDS, ISSUES AND IDEAS FROM AROUND THE GLOBE

WIRSH

systems from the Internet.

To create a seamless link between the three types of object code and the Microsoft Corp. client environment, Rand Merchant Bank used several object request brokers, Common Object Request Broker Architecture (CORBA) standards and some help from Sun.

"Sun helped us wrap CORBA objects so that they worked correctly in the OLE environment," Coetze said. "Using the NEO object bridge, you point it at a Smalltalk server that is running the NEO ORB, and it just makes those objects available as if they were OLE objects."

To incorporate the Smalltalk systems, Rand Merchant Bank used another ORB, called Distributed Smalltalk, from ParcPlace Systems, Inc.

The last piece of the puzzle was Joe, a Java ORB from Sun. Having decided to write

"In all cases, the objects you get via the ORB or the [NEO] object bridge look as though they are objects that are local to that environment," Coetze said. "So when you use Joe with Java, they look like Java objects. When you use them with the object bridge, they look like OLE objects."

Coetze said Joe's major strength is that it brings down only the data it needs, which then gets cached locally and gets downloaded again only if the class changes.

SIMPLER MAINTENANCE
For a global company such as Rand Merchant Bank, this has tremendous implications for systems maintenance. "That means you don't need to go round to each of your workstations and install Joe. You put the classes that constitute Joe onto your Web server, and

so that a customer, for example, would access a hobbled version of the application for inspecting his own investment portfolio.

The pilot system has already been running in South Africa, where staffers access it via 28.8K bit/sec. dial-up modems.

"The first time you access the system, it takes about 10 minutes for all the required classes to download. And then screen updates are virtually instantaneous," Coetze said. "Subsequent access to the system takes a minute or two while the system verifies the classes and downloads any that have changed."

Rand Merchant Bank is now setting up a second pilot with the Singapore office and has hit a few initial problems with delays over the Internet between South Africa and Singapore, which it hopes to cure by coding the system differently. The company hopes to do a final rollout within three to six months.

Looking back on what has been achieved, Coetze said he is surprised at how well the various systems have plugged together. And his enthusiasm for the object-based approach is intact: "The whole [object-oriented] paradigm certainly speeds things up. Once you have an infrastructure of objects, it becomes quite trivial to support new financial instruments and do calculations on them," he said.

all application front ends in Java, Coetze had to make a link with the Smalltalk applications, which were left mainly unchanged. Using Joe, the bank can pull the full functionality of the Smalltalk program and run it in the Java environment.

as your users use them via their Web browser, they will come to their machines as necessary."

This approach has other spin-offs, too. Rand Merchant Bank is experimenting with running different versions of the systems at different URLs

CONDON IS A FREELANCE WRITER BASED IN LONDON.

EDITOR'S NOTE

Worldwide Wanna-be's

Common wisdom holds that getting a presence on the World Wide Web can instantly give you access to global commerce.

But that just sounds a bit too easy, doesn't it? Global companies that have been doing business internationally in the physical world know that nothing—not even the mighty Internet—can erase all the boundaries with which they've contended for years. *Be they cultural, technical, regulatory or legal in nature.*

So we decided to look behind the curtain. What does the Internet offer to organizations seeking an easier way to attract or maintain an international presence? We spoke with traditional companies such as U.S.-based The Sharper Image and Itochu in Japan, as well as those that exist only on the Web, such as the Internet Bookshop in the UK.

Here's what we found. The Web can aggregate information such as company names and product attributes, providing a great one-stop shopping experience for manufacturers, suppliers and customers in the same industry, not to mention giving them an easy way to communicate.

It can also make regional business recognizable to foreign business partners such as Traitement Coopératif Et Integration de Systeme, a French company that now makes half of its revenue on international sales, thanks to the Web.

But there are also things the Web can't help you with: It won't execute international shipping charges, estimate delivery dates for a high volume of foreign buyers or translate currency. How you handle these and other hidden gotchas are what will separate your company from other global wanna-be's.

Perhaps Shrikant Ghosh, chairman of electronic commerce software maker Open Market, Inc., puts it best: "The Internet might not have trading boundaries, but packages do."

MARY BRANDEL
mary.brandel@cw.com

THE SHARPER IMAGE
Itochu
The Internet Bookshop
Traitement Coopératif Et Integration de Systeme
Open Market, Inc.

World South African Bank Solves an Object Puzzle



BY MARY BRANDEL

At first sight, the problems facing Vincent Coetzer, chief technologist at Rand Merchant Bank in Johannesburg, South Africa, are much like those at any other company. He has legacy systems he wants to link to new systems, and he wants to use the Internet to open up data and applications to overseas offices, mobile staffers and customers.

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INTERNATIONAL ISSUES AND LESSONS FROM AROUND THE GLOBE

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PHOTOGRAPH BY GRAEME WILLIAMS

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GLOBAL INDUSTRIES.com

GOING GLOBAL

By Alice LaPlante

Bloomberg will "source" his products from a network of 5,000 producers distributed by his company, Encore. In Ontario, firm the old-fashioned way, he traveled to factories, paged tirelessly through piles of specialty catalogs and traveled to endless trade shows to find cheap and reliable manufacturers of everything from stationery to baby care products.

Because 90% of the goods Encore distributes come from the Pacific Rim, Bloomberg can quickly set up enormous fax links between his office in New York City and manufacturing facilities in Hong Kong, Taiwan, Thailand and mainland China.

or resources.

As a "buyer" member of Bloomberg, Bloomberg logs on to the network, consults the database and finds detailed specification, including photographs, packaging designs, case markings, weight measurements and pricing estimates of potential purchases to distribute. He investigates the financial history of promising manufacturers, does market research and applies to licensing bodies and

"Bloomberg said.

NOTHING COMES EASY

Such are the promises of global electronic commerce.

Life is good, according to Bloomberg and other international electronic commerce pioneers, who say the Internet and related technologies are paving the way for dramatically more effective and efficient business relationships that span formerly formidable geographic and cultural boundaries.

In July, Ian Magazines, senior adviser to President Clinton on public policy, estimated that Internet commerce could account for 20% of global retail sales by 2007.

Still, many caution that this kind of rapid growth will not come easy. A recent report from the Center of Economic Co-operation

100

and the World Bank found that

most companies are not yet ready for

global expansion.

There's a common view that global electronic commerce should be easy and cheap and "all you do is simply plug your PC into the Internet, and you'll have this terrific free way to interact with customers," said Peter Empringham, general manager at British Telecom Global Technology and Consultancy (BT/GTC), a division of BT to Lon-

gtonic Commerce and Markets, Inc., which replicates those conditions.

The Internet might not have trading boundaries. But packages do.

In short, the Web will not overcome customs red tape or local regulations regarding import or export of certain goods. And the Web cannot guarantee that goods will arrive in pristine condition, especially after being subject to all the hazards of international shipping and handling.

Which is probably why the amount of consumer-related international business conducted over the Web has been such a well-publicized disappointment.

Take the online store of specialty retailer The Sharper Image, considered one of the Web's biggest success stories. Although it ended up more than \$1 million in sales in 1996, this represented just 1% of total revenue for the San Francisco firm. "A deep concern" about shipping costs, claimed John Treadie, man-

ager of e-commerce at The Sharper Image. Treadie said he hopes to grow that percentage to between 10% and 25% of total revenue within five years. But it will take some doing, he said, because of the logistical challenges of serving overseas markets.

Currently, a full 25% of The Sharper Image's online business comes from overseas consumers, "yet we're not really set up

to do things like that," Treadie said. "Europe and South America or Africa have far fewer or none at all, forcing users to make international calls to get online. Countries impose substantive telecom tariffs for calls crossing international borders, although the World Trade Organization Telecom Services Agreement, ratified in February, promises to alleviate some of this taxation and open up more global telecom markets. Because the backbone of the Internet is in the U.S., response time for communications originating overseas can be dismal. Much of the commercial software designed to enable electronic commerce doesn't support multiple languages simultaneously, much less multiple currencies. Nor can it scale up to the number of users who would be using it

on a global scale.

Vendors are scrambling to address these issues, and "it's getting better, but the public Internet and the Web are not yet reliable, robust or transparent enough to support real-world commerce," said Bruce Gaspar, research director of electronic commerce and business strategies at Gartner

Conn. Ken

group of

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GLOBAL BOUNDARIES

THE INTERNET
REALLY
HAS
IT
SOME
OF THE PAIN OF
GOING GLOBAL
By Alice LaPlante

Just 18 months ago,
Stephen Bloomberg's job
was a whole lot harder.

As operations manager at Encore Sales Ltd., a distributor of private-label merchandise to drug stores, department stores and discount stores throughout Canada, Bloomberg still "sourced" the more than 5,000 products distributed by his Concord, Ontario, firm the old-fashioned way. That is, he subscribed to dozens of industry magazines, paged tirelessly through piles of specialty catalogs and traveled to endless trade shows to find cheap and reliable manufacturers of everything from stationery to baby-care products.

Because 90% of the goods Encore distributes came from the Pacific Rim, Bloomberg formerly ran up enormous fax and telephone expenses communicating with potential suppliers, as well as accumulating frequent flier miles conducting

factory site inspections and face-to-face negotiations with manufacturers.

But this was before Bloomberg joined World Merchandise Exchange (Womex) Online, a private "members-only" electronic information service in Norwalk, Conn., designed for the worldwide general merchandise trading community. Among other services, Womex maintains a database carrying tens of thousands of products from thousands of manufacturers; provides newsletters with free electronic mail and online discussion forums; and offers links to industry publications, trade associations and other resources.

As a "buyer" member of Womex, Bloomberg logs on to the network, searches the database and finds detailed specifications, including photographs, packaging data, case markings, weight measurements and pricing estimates of potential products to distribute. He investigates the financial history of promising manufacturers, shoots off E-mail inquiries to interesting leads and

begins the sensitive negotiation process with in-depth online discussions with potential trading partners. No more placing midnight telephone calls to non-English-speaking whereabouts. No more listing page after page of questions or requests for additional material on China, Korea or Taiwan hoping that timely and intelligible replies will be forthcoming.

Best of all, because of *Business Week's* ever-growing list of members in the global merchandising world — many of them smaller manufacturers who dash advance in international publications — "this has given us a much richer pool of potential suppliers to work with," Bloomberg said.

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Still, many caution that this kind of rapid growth will not come easy. A recent report by Britain's Office of Economic Co-operation and Development, which surveyed 100 major users and providers of information networks in 13 countries, said electronic commerce will be the world's most critical economic issue in the 21st century. But it still calls such practice "a niche for a handful of businesses" because of myriad technical, regulatory, legal and cultural reasons.

There's a common view that global electronic commerce should be easy and cheap and "all you do is simply plug your PC into the Internet, and you'll have this terrific free way to interact with customers," said Peter Empringham, general manager at British Telecom Global Technology and Consultancy (BT/GTC), a division of BT in Lon-

don. Yet unless you commit a significant investment, "it simply isn't going to work." Just ask experienced users such as Bloomberg. Although undeniably helpful, the World Wide Web does not yet offer complete step-to-step solutions for transacting global business. More important, he said he doubts it ever will.

"Among other things, you would never, ever cut a final deal over E-mail," he said. "So we will always need to travel and visit and establish business relationships in more traditional ways."

"Although the Internet will ease some of the difficulties of global commerce, it won't eliminate the need for good business processes," said Shubik Ghosh, chairman of electronic commerce software maker Open Market, Inc. "People who think they can replicate their entire business overseas using a piece of software are going to be disappointed. The Internet might not have trading boundaries. But packages do."

In short, the Web will not overcome customs red tape or local regulations regarding import or export of certain goods. And the Web cannot guarantee that goods will arrive in pristine condition, especially after being subject to all the hazards of international shipping and handling.

Which is probably why the amount of consumer-related international business conducted via the Web has been such a well-publicized disappointment.

Take the online store of specialty retailer The Sharper Image, considered one of the Web's biggest success stories. Although it racked up more than \$1 million in sales in 1996, this represented just 1% of total revenue for the San Francisco firm. "A drop in the bucket," admitted Josh Treskoaf, manager of alternative media at The Sharper Image. Treskoaf said he hopes to grow that percentage to between 10% and 25% of total revenue within five years. But it will take some doing, he said, because of the logistical challenges of serving overseas markets.

Currently, a full 25% of The Sharper Image's online business comes from overseas customers. "yet we're not really set up

to do a significant international business," Treskoaf said. For starters, he doesn't have the systems — or the personnel — in place to calculate international shipping charges and estimate delivery times for a high volume of foreign buyers. There's the language issue, of course, and "necessarily, everyone wants to pay in a different currency," he said. "The aspect of our business is still in its infancy."

For now, Treskoaf encourages overseas customers to shop at local affiliates of The Sharper Image. "Eventually, we'll figure it out," he said. "There's a big market over there."

TAKING IT FOR GRANTED

And certainly technological challenges abound. Internet access is hardly universal. Although Hong Kong alone had more than 90 Internet service providers at last count, less developed countries in Central and South America or Africa have far fewer or none at all, forcing users to make international calls to get online. Countries impose substantive telecom tariffs for calls crossing international borders. Although the World Trade Organization Telecom Services Agreement, ratified in February, promises to alleviate some of this taxation and open up more global telecom markets. Because the backbone of the Internet is in the U.S., response time for communications originating overseas can be dismal. Much of the commercial software designed to enable electronic commerce doesn't support multiple languages simultaneously, much less multiple currencies. Nor can it scale up to the number of users who would be using it on a global scale.

Vendors are scrambling to address these issues, and "it's getting better, but the public Internet and the Web are not yet reliable, robust or omnipresent enough to support real-world commerce," said Bruce Gopell, research director of electronic commerce and Internet strategies at Gartner Group, Inc. in Stamford, Conn. Ken Horner, partner in the consulting group of

Please turn to next page

ILLUSTRATION BY JARRY DIBBLE

Continued from page 7

Deloitte & Touche in New York, agreed. "The infrastructure is already stressed."

An increasing number of vendors offer electronic commerce applications and engines that promise a global scope, including Microsoft Corp., Netscape Communications Corp., Open Market, BroadVision, Inc., Connect, and Oracle Corp. Yet "none of them have scored brilliantly" in an exhaustive evaluation of the technologies completed by London-based Ovum Ltd. this summer, said Mark Stevenson, an analyst at Ovum who co-authored the report. "Some of the products have the right idea, are definitely worth revisiting. But all are seeing huge financial losses since the market is still so embryonic," he said.

The main problem: lack of tools to support connection with distributed legacy systems across international subsidiaries; lack of scalability up to a global number of users; and lack of support tools to handle language and currency conversions. "A lot of them try to make it sound easy. They say, 'Buy our software, get online, sell your products worldwide.' That's rubbish," Stevenson said.

YOU SAY BANANA . . .

Most of the challenges, however, are "soft." Does your firm have the resources to deal with customer or supplier inquiries from other time zones or deal with the frustrations of language barriers? What about the puzzling mass of existing trade, regulatory, tax and criminal laws that may or may not apply in cyberspace?

Many companies are realizing that one of the biggest costs of global electronic commerce involves integrating the Internet (or intranet or extranet) into the rest of their business practices. This is the same whether they're implementing Web business domestically or internationally. But "companies simply printing out E-mail messages and then dealing with them manually are losing much of the benefit," Gupell said.

Which is why Yukihiko Kayama, general manager of technology at the information systems and services group of Mitsubishi Corp. in Tokyo, believes the countries lagging in the information revolution might in fact come out ahead in the global electronic commerce arena — because of the lack of existing systems to retrofit.

Kayama is also a member of the board of directors of JapanNet, Japan's government-sponsored directive to develop a secure electronic commerce infrastructure for international trading. He has also participated in initiatives on cryptography, digital certificates and payment protocols. These are all key technical considerations, Kayama said. "but the biggest challenge facing Japanese companies who want to engage in electronic commerce is their conversion of legacy systems to connect to the Internet."

There's also the issue of scalability of existing applications. "Netscape's Merchant Server can certify only 10,000 users, but suddenly you are trying to manage electronic trading communities of 300,000 and more," said Alberto Ypez, CEO of E-commerce, a Sunnyvale, Calif., software firm specializing in enterprise Internet-based software solutions. Even with internal applications, "very few products are enterprise-ready when that involves moving quickly from 20,000 users to a million users," Ypez said. "Most of these applications are primarily workshop and departmental, trying to scale up to enterprise, particularly global enterprise, it's going to take a lot of work."

"Fulfillment, inventory, accounting, accounts receivable. Every single aspect of doing business now must be linked through the Web sites. Which means Web server products need to be more complex, and the cost estimates go from a few tens of thousands of dollars to millions of dollars," Garner Group's Gupell said.

BTIGTC is working on a private extranet that would link it seamlessly to its major customers around the globe, including IBM, Siemens AG and Andersen Consulting. "We thought it would be a good way of managing accounts and would promote a rapid and free exchange of information," he said. But he's found out that "it's taking a lot longer and much more money to get there than we expected."

The biggest issue: managing the content of the extranet. "We have to refresh it often enough to make it worthwhile to our customers." BT ended up outsourcing the job to a London firm specializing in Web content management.

And cultural issues abound. For example, in Germany, a vendor by law cannot

accept payment via credit card until two weeks after the order has been sent. And you can't display a swastika on a computer screen. "Yet if Amazon.com has books that use swastikas as artwork or within the text, who is legally responsible for breaking German law?" Stevenson asked. And who pays taxes and customs duties? "Most systems aren't sophisticated enough to 'block' orders from specific regions or countries to avoid breaking the law by shipping forbidden products to a particular country."

There are also technical challenges arising from language differences. English is a 7-bit language, as evidenced by ASCII; most European languages are 8-bit languages, so ASCII cannot accommodate them. Not to mention Pacific Rim languages such as Japanese, Chinese and Korean, which means that processing data across language barriers is much more difficult than merely finding an adequate translator.

WHAT'S A COMPANY TO DO?

What are multinationals doing about this? Mostly taking things one step at a time, said George Chang, senior product marketing manager for the international platform at BroadVision, which currently derives more than 50% of its revenue from international markets. "We're seeing that even in large companies, such as Kodak, the first phase of deployment of a global electronic commerce system does not involve multilanguage support," Chang said, adding that the last release of BroadVision software is available in five languages and can process data in five languages "since some companies are starting to look ahead."

The currency issue is even more complex. Most software from vendors such as Connect, Oracle and Open Market does not allow users to display more than one currency symbol and currency format. So merely to display a price in French francs for French customers or suppliers or in British pounds for English customers or suppliers is beyond the scope of most electronic commerce systems.

And that's just displaying prices. It doesn't even touch on the complexities of real-time currency conversions. Chang said on-the-spot conversion of prices from one currency to another will probably be the domain of a third-party service provider,

CONTESTANTS

GA

Singapore's "bright, shiny, genteel island" will fail unless it abandons online censorship.

- Singapore, the Netherlands, Belgium, the former Hong Kong

SPRINTERS

Simple, innovative public policy is a strength across the board.

- Finland, Sweden, Denmark, Norway, New Zealand

Portugal, Turkey, Argentina, Venezuela, Colombia, Poland, Thailand

RESISTERS

These countries are either too technologically undeveloped or too politically isolated to become electronic commerce players in the foreseeable future.

- China, Saudi Arabia, India, Philippines, Russia, Pakistan, Iran

His advice to other would-be global electronic businesses: "It can be extremely harmful to go in with the proverbial grand plan. You must maintain the attitude that you don't have all the answers."

KEEP ON TRUCKING

Users such as Encore's Bloomberg are looking forward to an increasingly wired world.

He's especially eager to see shipping companies establish online connections and have even more potential suppliers consolidated into a single electronic source. "I'm open to anything they want to offer," he said of electronic commerce vendors such as Womex. Yet despite the advantages electronic commerce systems offer, he said, most would-be global businesses still face many of the challenges that existed before.

In Bloomberg's case, he still must search for the best, most reliable, ethical and cost-effective sources of merchandise for Encore to distribute to its customers.

Indeed, "the global trading business hasn't changed in substance for centuries," said Glenn Reyer, vice president of global marketing for Womex. "Businesses must still find reliable and cheap suppliers. They must still establish strong relationships. And they must still negotiate favorable prices and delivery dates. We don't eliminate that. We just make the process more efficient."

Of course, there are logical extensions to the services Womex offers its members: electronic data interchange and logistics management, for example, as well as support for multimedia and video for global member communications. "But no electronic service will ever solve the problem of physical transport of goods, and no technology can eliminate language barriers," Reyer said.

Bloomberg agreed, pointing to the time and expense he now saves because faxing has been nearly replaced by E-mail communications. Yet he still goes to trade shows, still peruses magazines and catalogs.

"This is another tool — an addition, not a substitution for the way we already did things," he said. "I don't believe that electronic commerce will ever completely automate the trade cycle. Not in my business."

ALAPLANTE IS A FREELANCE WRITER BASED IN WOODSIDE, CALIF. SHE CAN BE REACHED AT ALAPLANTE@AOL.COM.



which would also be involved in closing the transaction between trading partners.

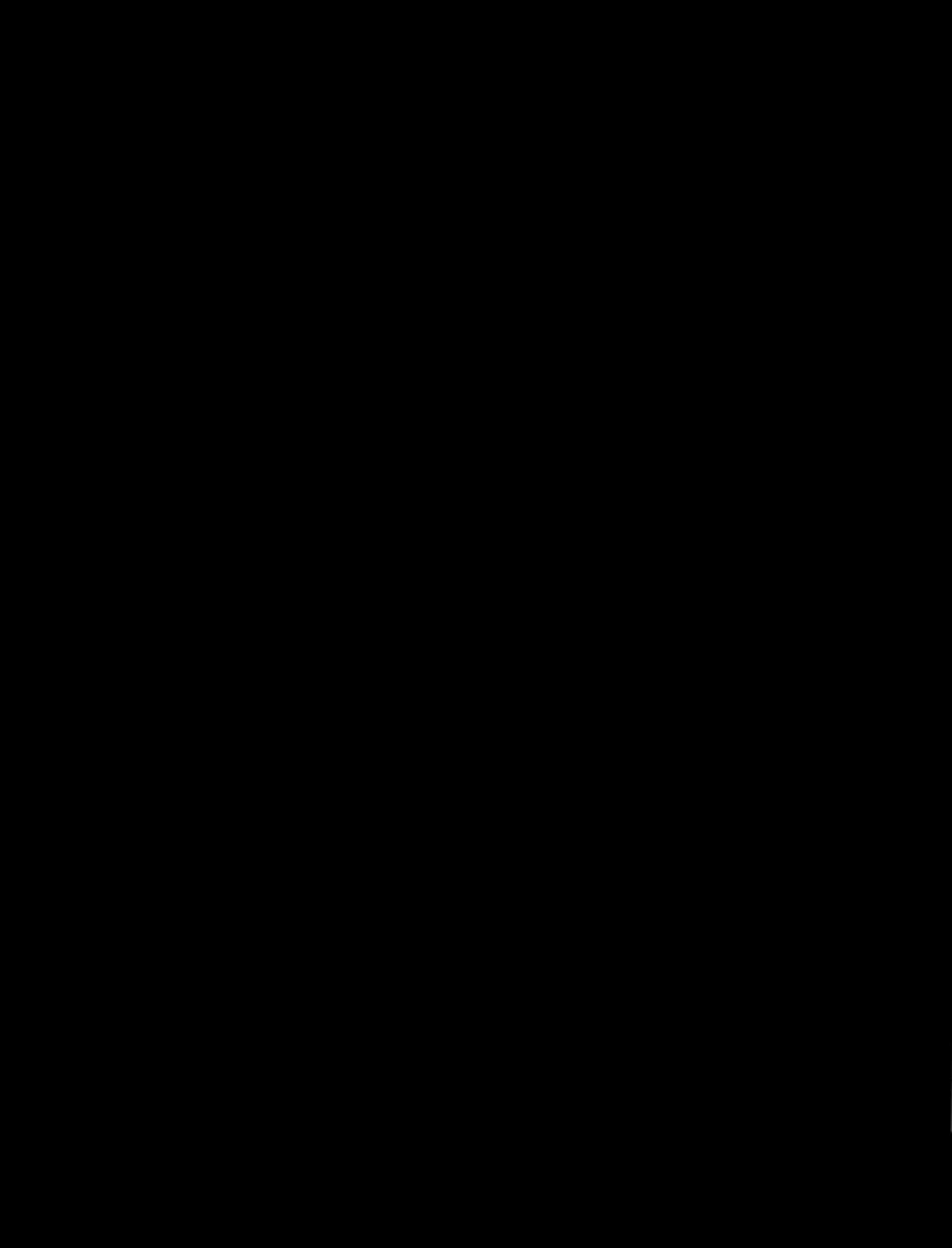
For now, The Sharper Image's Tretowak said, "We tell people to get out their credit cards and pay in dollars."

At U.S.-based Prodigy, Inc., the first online service recognized by the Chinese government, cultural differences include the fact that the Chinese are accustomed to paying cash in advance for business services. So Prodigy needed to adjust its billing and payment policies to reflect this comfort level.

"That was our single biggest impediment

to the payment policy," said Paul Delacey, president and CEO of Prodigy. He said cultural differences make it essential to establish local companies staffed with locals.

Big-selling online items in the U.S. — fresh flowers, for example — won't necessarily go over big in Africa or Mexico. Prodigy has learned that anything educational is turning out to be extremely popular. A 5,000-year history of China is one off Prodigy's most popular Chinese sites, and Delacey expects stock market and brokerage services and gaming to "be really big."



WORLD CONTESTANTS

• Business

GATEWAYS

Singapore's bid to become an "intelligent island" will fail unless it abandons online censorship.

- Singapore, the Netherlands, Belgium, the former Hong Kong

SPRINTERS

Simple, innovative public policy is a strength across the board.

- Finland, Sweden, Denmark, Norway, New Zealand

STRAGGLERS

These potentially lucrative markets are at a loss of being left behind.

- Australia, Italy, Spain

- Mexico, Malaysia, India, South Africa, Indonesia, Czech Republic, Portugal, Turkey, Argentina, Venezuela, Colombia, Poland, Thailand

RESISTERS

These countries are either too technologically underdeveloped or too politically isolated to become electronic commerce players in the foreseeable future.

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100

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“how do we
sell more stuff to
more people
in more places?”
solution**

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BOOKSHOP HITS WEB WALLS

DESPITE INTERNATIONAL SUCCESS, BOOKSTORE FOUNDER SEES ROAD-BLOCKS FOR NON-U.S. WEB-BASED COMPANIES
BY KRISTI ESSICK

For overseas businesses, the idea of setting up an electronic commerce Web site is alluring. An online presence can introduce your products to the largest group of Internet users in the world, North Americans, as well as attract customers around the globe.

However, non-U.S. companies face significant roadblocks to developing a Web presence. At least, that's the view at the Internet Bookshop Ltd. in Cambridge, England (www.bookshop.co.uk).

The UK-based online bookstore offers the second-largest number of in-print titles (859,000) on the 'net. Its prices are competitive, and its sales have risen dramatically since opening for business three years ago. But revenue lags behind that of its fiercest competitor, Amazon.com, which did 30 times its sales in 1996.

One of Amazon.com's main competitive advantages is that U.S. users are much more prone than Europeans to use the Internet to purchase goods, and they often go to Amazon.com first, said Darryl Matrocks, Internet Bookshop founder and managing director.

"At the end of the day, there will be domestic loyalty," Matrocks said.

More than 40% of the Internet Bookshop's sales do actually come from U.S. customers. But Amazon.com has wider recogni-

tion and doesn't make U.S.-based customers pay for international shipping or buy products in pounds sterling, Matrocks said.

Overall, the Internet Bookshop is an international success story. In less than three years, the 25-employee company has garnered nearly 80% of its sales from outside the UK, whereas only about one-third of Amazon.com's sales are international.

The site is based on Compaq Computer Corp. servers running Microsoft Corp.'s Windows NT 4.0 and a Microsoft SQL Server database. Its access provider is PSINet.

Some of its biggest international markets are Scandinavia, Australia, New Zealand and Germany, mainly because customers in these regions are interested in buying English-language books, Matrocks said. He is currently building up a database of German and Italian titles and locating mirror sites

Eighty percent of the SHOP'S sales are made OUTSIDE the UK.

in Germany and Italy, but the process is long and expensive. In addition, the company must translate the entire site and hire customer support staffers for each language.

On top of the language issue, the Internet Bookshop has to find ways to ship products internationally quickly and cheaply and offer prices that are low enough to offset the shipping price, Matrocks said.

Also, the Internet Bookshop has had to build an in-house software system that determines international taxes with Microsoft BackOffice components. Buyers pay for the books in pounds sterling on their credit cards but are billed in their local currencies on their statements — often at very favorable exchange rates, Matrocks said.

"Another prime problem is the establishment of brand," Matrocks said. To become well known requires the company to sink large sums of money into Internet advertising, he said.

LOOKING BACK

If Matrocks could do it all over again, he would have located his business in the U.S., despite the fact that his product is sold strictly online. Not only is the customer base much larger in the U.S., but getting funding from venture capitalists is also "much, much easier than in the UK," Matrocks said. In addition, the cost of leasing telecommunications lines and buying computer systems is much higher in the U.K., he said.

Upgrading the technical infrastructure, marketing and advertising have cost the Internet Bookshop huge sums of money, Matrocks said. The company posted a loss of 169,800 pounds (US\$278,472) for the year ending Dec. 31, 1996, but sales are increasing. In the first three months of 1997, it received 23,000 orders — more than in 1996 and a 59% increase over the last three quarters of 1996, Matrocks said.

"Ideally, the Internet provides the communication highway across the continents, but then you face all the problems that a regular business does," he said.

ESSICK IS A CORRESPONDENT AT THE IDG NEWS SERVICE IN THE LONDON BUREAU.

PHOTOGRAPH BY STEVE ELLIOTT

FRANCE: TRAITEMENT COOPERATIF & INTEGRATION DE SYSTEME

FROM 0 TO 50% IN ONE YEAR

FRENCH SOFTWARE
MAKER ATTRIBUTES
HALF ITS REVENUE TO
INTERNATIONAL SALES —
THANKS TO THE WEB

BY JEANETTE BORZO

When Serge Charbit had trouble with a personal organizer he bought recently from a foreign company, he found answers to his support question immediately on the World Wide Web. Ironically, he's been unable to get adequate support for a product he purchased from a software company located 10km from his home in Paris. "I've called them" with support questions, Charbit said. "But it's been two months now, and I still haven't heard from them."

When it comes to high-tech products, he much prefers to buy on the Web than go to the local store, and Charbit is a man who practices what he preaches. As president and chief executive officer at Traitement Coopératif & Integration de Système (TCIS), a 5-year-old French company with a variety of applications for users of IBM's AS/400 minicomputers, Charbit had no business outside of France until last year. Today, "grâce à la Web," Charbit expects to attribute half his company's revenue to international sales in the U.S., New Zealand, Australia, Sweden and Indonesia.

Simply by translating software products and their accompanying manuals from French into English and placing them on the Web for demonstration purposes, Charbit expanded beyond his domestic market and increased sales by 10% last year. This year, he expects revenue to surge to 12 million to 16 million francs, from 8 million francs (US\$1.04 million) last year.

"There is one thing for sure: Without the

Internet, TCIS would never have had the visibility it has today," Charbit said.

Based on previous experience with France's Minitel system (a national information utility accessible from dumb terminals), TCIS learned how to ease the sales process by enabling customers to place orders via a central product database.

So early in 1996, TCIS put a demo version of one of its products, ClientObject/400, on the Web and opened its site in both French and English. The system is based on Microsoft Corp.'s Internet Information Server. The software offered users a 30-day free trial. Those who liked it could pay for the software and obtain a key to unlock the product's full capabilities.

Soon after, a marketing manager at Borland International, Inc., discovered the application, which works with Borland's Delphi rapid application development tool.

That Web-based discovery led to a lucrative business deal. "I didn't know anyone at Borland, but thanks to the Web, Borland saw us," Charbit explained.

TCIS planned to launch several products (one called Update Object/400) this fall on a redesigned Web site. The Web-based growth has led to one or two growing pains. For instance, TCIS' internal resources weren't sufficient to redesign and launch a new look, so the company was waiting this summer for its outside contractor to finish with the Web site redesign.

TCIS's products can be ordered on the Web site and paid for with either a credit card, confidential card information sent in an electronic message or a check. Charbit uses no special security system but switched to a New York bank for all payments when the concept of credit-card payments over the Web befuddled his French-based bank.

Today, Charbit considers the Internet to be a more invaluable business tool than the phone, citing the occasional ineffec-

tiveness and European expense of the phone.

He has even found that the newness of the Web can yield unexpected advantages. For example, Charbit wanted to know what to do about

customs charges for overseas customers.

"We have no context in which to charge you," is what customs officials told him, Charbit said. "They never called me back," he added with a smile.

Still, Charbit knows the new medium has its pitfalls. "The biggest challenge is to let your potential clients know about the product," he said. "And it's more complicated to explain how to buy something on the Web than if you would open a store and start offering products."

BORZO IS THE IDG NEWS SERVICE BUREAU CHIEF IN PARIS



Charbit considers the INTERNET to be an even more VALUABLE tool than the phone.

PHOTOGRAPH BY BENNETT BURTON

U.S.: X-RADIO CORP.

THE NOTE HEARD 'ROUND THE WORLD

THIS ALTERNATIVE MUSIC SITE, WHICH SELLS CDS ON THE WEB, IS GROWING ITS BUSINESSES AT A RATE OF 100% PER MONTH
BY NIAILL MCKAY

Eighteen months ago, Wilton Riesenbauer and Stephen McGarigle started to digitize their favorite techno, ambient and trip hop music CDs and play them on their World Wide Web site, www.x-radio.com.

At that time, trip hop and techno were only beginning to take root in London and Paris, and CDs were not readily available in major U.S. record stores.

The idea was to have an alternative music radio station on the Web. But after six months, a listener called asking for six techno CDs of Riesenbauer's choice.

"That is when we got the idea to start selling CDs on the Web," said Riesenbauer, chief executive officer of the San Francisco-based

x-radio Corp. "Until then it was just a hobby, but following that we began to see the potential of x-radio."

Riesenbauer built a digital juke box, selected six CDs, digitized them and put them behind one RealAudio button, thus setting up a Web-based business.

In the last two months, x-radio has built a merchant server and is now taking credit-card orders over the Internet, using VeriSign, Inc. certification.

Today, 80% of x-radio's business comes from overseas, from places as far afield as South Africa, Saudi Arabia, Costa Rica, Larva, Australia and Sweden.

X-radio is growing its businesses at a rate of 100% per month and is just one of the many new music sites springing up on the Web. Some, such as CDnow, have built warehouses on the 'net. But where x-radio



and CDnow differ is that CDnow asks customers for an artist's name or a title.

"We believe that is the wrong model," said Stephen McGarigle, vice president of operations for x-radio. "While CDnow will probably do very well, for the smaller operators like ourselves, we will have to use all the advantages of a new medium to get our customers' attention."

That's why x-radio bills itself as a radio station, webcasting concerts, giving online reviews and planning to add disc jockeys to its broadcasts for a couple hours a day.

Stores such as Tower Records or Virgin Records are just beginning to come to grips with selling CDs over the Web. "I think the record companies are terrified of the Web and have been very slow to get involved," said Cynthia Brumfield, an entertainment analyst at Carmel, Calif.-based consultancy Paul Kagin and Associates. "It's a market waiting to happen, but nobody has quite figured out what the business model is yet. The volumes are not yet there to justify the record companies' involvement."

This is helping some of the smaller, more innovative services, such as those found at sonicnet.com, www.musicnet.com and adict.com, get up and running.

No doubt lack of immediate financial reward is what has stopped record companies from getting involved, but New York-based new media consultancy Jupiter Communications says by 2002, online sales of prerecorded music will total \$1.6 billion, or 7.5% of the overall music market.

McGarigle said this figure seems naive. "What the Internet is doing is reversing the trend of the super band being forced upon the record buyers by the likes of MTV and the record companies. It's not a brave new world, but it's hurting record companies because they're losing control of the industry."

By 2002, online sales of PRERECORDED music will be 7.5% of the MUSIC market.

PHOTOGRAPH BY JOHN MAGNI

JAPAN: ITOCHU CORP.

SOWING SEEDS FOR 'NET USE

JAPANESE COMPANY
BUILDS TEXTILE SITE
THAT MIRRORS GLOBAL
PARTNERS' AND TRADERS'
REAL-WORLD DEALINGS
BY ROB GUTH

Japan's Itochu Corp. is planting the seeds of its future in the swank Tokyo district of Minami Aoyama.

Across Route 246, in stark contrast to Itochu's towering headquarters, is Itochu Internet Corp. (IIC), a single-room, 10-person subsidiary that is exploring how its US\$150 billion trading portfolio can exploit the global network of networks.

While Itochu is involved in many Internet-related ventures, including participating in an Australian cybermall, its IIC unit is charged with melding Itochu's diverse real-world business with the Web, said Yasuo Awamoto, senior manager at IIC.

"Our mission . . . is to find ways to use the Internet to make existing businesses within Itochu more efficient and profitable," he said.

The 140-year-old giant has built its fortune as a behind-the-scenes dealmaker for businesses spanning satellite communications, lumber and yarn. As with all of Japan's "sogo shosha," or general trading companies, Itochu is the quintessential middleman—the very player whose role could be threatened by the emerging "one-to-one" world of Internet commerce.

The shosha, whose ranks include Itochu, Mitsubishi Corp. and Marubeni Corp., have traditionally drawn their strength from their massive global networks of people that provide deep knowledge of local cultures, languages, laws and business practices. Itochu, for instance, has more than 7,000 employ-

ees spread throughout 220 offices worldwide.

But as Japan's multinationals in recent years have strengthened their own global contacts, some argue that the shosha are not as critical as they once were. "The value add of simply having people who are familiar with a culture and the system is no longer a strength," said Atsushi Abe, former manager of a leading Japanese trading company and now managing director of the Tokyo office of Alex, Brown & Sons.

Enter Awamoto, who with his colleagues at IIC is creating several Web-based marketplaces that mirror Itochu's existing businesses. The first of these is Tex-Mart (www.tex-market.co.jp), a marketplace for textiles.

The site mirrors Itochu's real-world textile business, in which the company oversees the buying and selling of tens of thousands of textiles among hundreds of partners around the world.

Opened in April, Tex-Mart enables textile buyers equipped with a browser to search for fabrics by inputting characteristics of what they need. Buyers can tap the Tex-Mart Web site and enter their desired fabric's composition, in addition to other criteria such as whether the fabric should be woven or knitted, whether it should be waterproof and whether they can specify a particular mill from which to purchase the material. The site then displays in full color suppliers' fabrics that might meet the buyer's needs.

The site is powered by Sun Microsystems, Inc. servers running Sybase, Inc.'s System 10 and Netscape Communications Corp.'s Commerce Server.

The mart handles fabric purchases with a debit system. Participants in Tex-Mart leave a small amount of money with the

mart, which Itochu debits for purchases.

With just 100 members in seven countries, including Japan, Korea, the U.S. and Italy, Tex-Mart is admittedly a modest endeavor. With 100 million yen (US\$900,000) in revenue expected the first year, Tex-Mart will have little immediate impact on Itochu's \$18 billion textile business.

Speed is one advantage. With Tex-Mart, delivery times are cut to days from what could take weeks under the current fax and telex system, Awamoto said. And textile buyers can easily track purchases.

Most important, Awamoto said, is the data analysis the online market offers. With an analysis portion of Tex-Mart, users can produce graphs and charts that show historical trends in textile buying.

GUTH IS AN IDG NEWS SERVICE CORRESPONDENT IN TOKYO.



Itochu is the QUINTESSENTIAL middleman, whose ROLE can be threatened by the WORLD of 'net commerce.

PHOTOGRAPH BY TOM BRISER

THERE'S MORE TO TAKING
YOUR WEB SITE GLOBAL THAN
TRANSLATION — FACTOR IN
LOCAL LINGO AND FLAVOR
BY SARI KALIN



THE
IMPORTANCE
OF BEING
MULTICULTURALLY

WHEN IN ROME, DO AS THE ROMANS DO. But when on the Internet, where a Web site can reach an audience from Rome, Italy, to Rome, N.Y., how does a company know which language to speak, let alone how to blend in with the locals?

For most Fortune 500 companies' early Web efforts, English was the language — and American the culture — of choice, given that the bulk of Web surfers resided in the U.S. As Internet use starts to take off from Paris, Texas, to Paris, France, however, some U.S.-based multinationals are starting to appreciate the "world" in the World Wide Web.

As of August, for instance, Sony Music Entertainment Inc. boasted 13 country-specific Web sites; so French fans can see which Sony artists are "en tournée" in Nice, and German fans can see which Sony records topped the local album charts "diese Woche." United Parcel Service, Inc. had similarly expanded its Web-based tracking service so customers from 13 European countries could check — in their local language — whether their packages had reached their destinations around the world.

One factor prodding these and other companies is the expected growth in Web usage outside the U.S. According to Jupiter Communications, the percentage of non-U.S. households with online access will grow from roughly 32% last year to 46% by 2000.

But such numbers are not enough information to make a globalization decision. Several companies interviewed said that before deciding to translate parts of their main corporate site or develop country-specific satellite sites, they tracked the locales of vis-

itors to their main site and matched those against the geographic breakdown of their customer base. Most companies' first multilingual efforts came a year or more after launching their initial site.

"Don't just make your site multicultural because that is what the latest trend is," said Marvin Chow, interactive marketing manager at Reebok International Ltd., with headquarters in Stoughton, Mass. Reebok launched region-specific sites in Korea, Japan, the UK and Hong Kong after studying its market and Web traffic.

Companies such as Reebok that have made the leap see their multilingual Web presence as a natural extension to their global sales and marketing strategies.

"We publish a lot of our other materials in the local language," said Gareth Thomas, marketing manager at UPS Europe. "Why should we limit ease of use and access on the Internet when we don't in the other medium?"

LEARNING THE LOCAL LINGO

Once a company has decided to go global, Web and marketing personnel should be prepared. It's not as simple as translating every word on a page.

To be sure, linguistic and graphical details are as important on the Web as in any translation project, experts say, especially as other languages and cultures have developed their own Web lingo and iconography that differ from that in the U.S. The English term "home page" is translated as "pagina inicial," or first page, in Spanish and "page d'accueil," or welcome page, in French. And words that a novice American Web surfer would easily recognize, such as an-American-style mailbox, may not speak as clearly to an overseas user. "In color and shape do not immediately convey for Europeans the notion of sending mail," said Yury Radzievsky, president and chief executive officer of YAR Communications, Inc. in New York, a multicultural communications agency that is localizing Digital Equip-

SOURCE: GARTNER GROUP, INC.

ment Corp.'s AltaVista Internet Software, Inc. corporate site. "A more universal icon would be an envelope."

Beyond fine-tuning the language, companies must consider a host of other issues that could add costs or complexity to a multicultural Web effort, according to John Hearn, a research analyst in interactive marketing at Gartner Group, Inc. in Stamford, Conn. (see box above).

Companies that have embarked on the Web globalization process advise their peers to set up a global strategy. That way they can avoid sites that don't measure up to corporate quality standards.

"Even within a global Web strategy, companies seek varying degrees of centralized control over technology and content. At UPS, for example, all domestic and foreign

Web pages are hosted at the company's data centers in Mahwah, N.J., and near the corporate headquarters in Atlanta because that's where a dozen mainframes track shipments worldwide, UPS's Thomas said. But Sony Music has taken a more decentralized approach, said Mark Wachen, director of new technology and business development at Sony Music in New York. Many Sony business units have made their own Web hosting arrangements, as much of the decision to develop a Web presence is made in the region. Even so, Sony Music is looking to share resources where it makes sense.

DIFFERENT TASTES

In terms of content, companies often strive to balance the need for a consistent brand and look around the world with the need to appeal to local tastes. McDonald's Corp., for example, has developed guidelines to ensure that each country delivers a consistent rendering of the corporate philosophy. But "that is not to say that every single page of every single country is going to look like the Web site developed back in the U.S.," said Judy Newby, project manager and Webmaster at McDonald's in Oakbrook, Ill. McDonald's main site, for example, uses primary colors and greets visitors with the golden arches and gold tent against a Ronald McDonald-red background. The Japanese site, however, uses pinks and browns to complement the McDonald's red and gold. "The color scheme is very different from ours, but that's because it's made for the Japanese [market]," Newby said.

The most important advice companies offer: Start working early with the overseas troops on your Web strategy, and communicate often so everyone is on the same page.

"It's very difficult with a global company, just communicating, with the different time zones and everything else," Newby said, noting McDonald's put together a booklet before launching its Web site last year to let its foreign operations know what to do to participate on the Web. "If you start early and you build a rapport with people . . . it's a lot easier to get things done."

KALIN IS AN IDG NEWS SERVICE CORRESPONDENT IN THE BOSTON BUREAU

ILLUSTRATION BY JAMES GOSSE

CORRECT

the

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OPINION

Network clutches Considering what a surly, ungrateful bunch we users are, the dogged

dedication of the people who keep our networks running every day is a thing of wonder.

You just can't help thinking that while reading Pat Dryden's page 1 story on the personal strain and pain of keeping networks up year-round.

How often do we stop to thank the people who put the health of their company networks ahead of everything else? They include women like the Sprint network supervisor who had to walk away from a slot machine winning streak when an insistent pager called her to duty. And men like the tech services manager who had to abandon his family at Disney World for several hours during a network crisis. What did those disappointed kids learn to sing — "It's a Continuous-Uptime World After All?"



Ironically, the more sophisticated network technology becomes, the more tightly it grasps IT professionals in its clutches on a round-the-clock basis.

At the Network/Interop trade show this week in Atlanta, net managers will see plenty of new products designed to provide even more ability to manage these monsters remotely. But that doesn't mean less work. It means more ways to monitor devices that will beep them awake late at night — or ring their cell phones in a movie theater.

Many of our IT help desk and support personnel also live the harried lives of rescue workers. One evening not long ago, I spent 40 minutes on the phone with Tom Lamoureux, our director of support services. He patiently talked me through the last tedious steps of a remote Lotus Notes installation — all the while hunkered down in his car in some parking lot, missing part of his son's hockey game.

So the next time your network hiccups and you feel a full-blown user snit coming on, keep in mind what these folks do for us all. And thanks again, Tom.

Maryfran Johnson

Maryfran Johnson, Executive editor
Internet: maryfran.johnson@cw.com



LETTERS

What's so bad about using E-mail to conduct business?

WHAT ARE 15 departments "dis-mayed" that corporate employees used internal E-mail and the Internet to conduct serious business during a time of crisis ("Siren call of Internet mail: UPS strike boosts E-mail traffic," CW, Aug. 25)? Are they dismayed that conscientious employees were not sending around joke messages? Are they dismayed because consumers use of their employer's multi-million-dollar investment in communications equipment will be used for business communications instead of continuous downloading of software to the new network computers?

According to the article, security is the cause of their dismay. But that's only a smoke screen. Businesses commonly use their fax machines to transmit requests, proposals and even contracts. With the speed- dialing features of current fax machines, these sensitive documents are frequently sent to the wrong machine.

Obviously there is more to the story. Are 15 departments actually dismayed, or are they elated? Maybe the problem exists only in the minds of Computerworld's writers and editors.

David Miller
Richmond, Va.
dpmiller@rcn.com

Eghead spam unappetizing

YOUR ARTICLES on spam are right on target. I've been attempting to have my name removed from an Eghead Computer mailing list for three months, with no success. Despite using all three methods identified

by Eghead to have my name removed, they can't "make it so."

With only two ways of sending E-mail to my corporate account, Eghead claims they can't figure out how I'm receiving their advertisements. We'll see if my company's legal department can handle this.

What's needed is a law similar to the Telecommunications Act that requires a solicitor to drop your name immediately if you tell it to. Spammers will take notice if the law is enforced with some highly publicized and expensive lawsuits.

Terry Tidbury
Honolulu

SAP's already gone to school

THE ARTICLE in the Aug. 12 issue about SAP R/3 being integrated into the business school curricula at five universities ("SAP AG enters college," CW) was interesting. However, as a professor at one of those universities, I feel you missed the bigger story. We have been using SAP R/3 in the classroom for more than a year now. We are currently using Version 3.0-D, but will be upgrading to Version 3.1 shortly. We have integrated SAP R/3 into nine business courses. Several of these courses are being offered for the third semester using SAP R/3.

If you want a story about what a college has done instead of what it is planning to do, come talk with us.

Ray Boykin
California State University
Chico, Calif.
rboykin@csuchico.edu

No magic bullet here

I WAS QUOTED correctly by Pat Dryden in his article on response time measurement ("15 managers seek diagnostics for app health," CW, Sept. 1), then I am at least guilty of sloppy speech.

What I should have said (and thought I had) was that code that is sufficiently modular can be instrumented by wrapping Application Response Measurement (ARM) calls around existing transactions.

Most code in use today was written prior to any standardized method being available in the distributed environment for internal measurement of performance. It is therefore unlikely that software engineers have designed their applications with this instrumentation in mind. Many applications will have to be modified in order to allow for response time instrumentation.

ARM could be a powerful aid in tracking application performance, but it is not magical.

Richard Weiss
Enterprise Management Systems
Charles Schwab & Co.
San Francisco
Richard.Weiss@schwab.com

Computerworld welcomes comments from its readers. Letters should not exceed 200 words and should be addressed to Maryfran Johnson, Executive Editor, Computerworld, PO Box 9177, 500 Old Connecticut Path, Framingham, Mass. 01701. Fax number: (508) 875-8533. Internet: letters@cw.com. Please include an address and phone number for verification.

Getting off the customer relationship sandbar

Patricia B. Seybold

In the past six months, I've met a lot of people who are caught in the same dilemma: They want to get moving on IT initiatives that will make it easier for their customers to do business with them. But they're in organizational paralysis.

IT executives are waiting for the business people to loosen up the purse strings. Business executives are stymied by the apparent complexity of projects that consolidate all customer data and streamline cross-departmental business processes.

CEOs want more "customer intimacy" to increase customer loyalty and increase revenue. Line-of-business executives translate that into operational goals such as "integrated customer care" or "a holistic view of customers." IT executives drill down and talk about the need for data warehouses, middleware to integrate applications across business processes and integrated customer contact frameworks that would



Why aren't more companies moving to deliver streamlined, customer-facing systems?

centralize customer contact information whether the contact was by fax, E-mail or face-to-face meetings.

So, if all those parties agree, why aren't more companies moving forward aggressively to deliver streamlined, customer-facing systems? Because no one is willing to step up to the bar. The CEOs are committed, but no one has brought them a game plan on which they can sign off. They're waiting for specific initiatives with measurable results. The

line-of-business executives are stymied because each has a limited purview. They can fund only those projects that impact their product line or their department.

That leaves IT managers stuck without funding for information integration work that is, by its very nature, cross-functional and cross-departmental.

Their budgets and resources already have been allocated to large-scale, multiyear SAP implementations or other large projects designed to streamline internal operations.

To make matters worse, many companies have competing Internet and World Wide Web initiatives. Each is sponsored by a group that feels it should have the ultimate control over the company's Web presence. The result is often a fragmented set of faces to the customer. Does that picture look familiar? If you're stuck trying to get off this customer relationship sandbar, it may help to know that you have plenty of company. But don't lose heart.

There are two scenarios that seem to work. The most efficient is for a visionary corporate marketing or sales vice president to seize the initiative and begin to move forward aggressively. That person needs to be able to bring together

the sales, marketing, customer service, operations, finance, product planning, manufacturing and order-fulfillment departments across all lines of business and seduce them into cooperating on the design of a single, cohesive customer information infrastructure. He also has to have deep pockets and the willingness to spend what it takes.

The second, and more tortuous, path is for a group of business executives to band together for the common good of the company and its customers, pool their resources and agree on priorities and funding. The IT planners need to be part of that coalition, so they can help direct funding to the infrastructure investments that will have the greatest leverage. The coalition approach takes longer but may result in equally impressive results.

In both cases, of course, there have to be small victories en route — victories that will delight certain groups of customers and yield measurable results. They will build momentum and enthusiasm. But whichever approach you take, you'd better start now. Your competitors have your customers in their sights. □

Seybold is president of *Patricia Seybold Group* in Boston. Her Internet address is pseybold@pjgroup.com.

Rocketing IS salaries: The party's over

Michael Schrage

AC+ (not C++) computer science graduate straight out of the University of Cincinnati gets a \$36,000 per year starting salary. Not-quite-top-tier year 2000 and SAP consultants snag up to \$2,000 per day. I personally know a half-dozen Fortune 1,000 webmasters not yet 29 years old who make more than \$100,000 per year.

This can't go on.

Don't get me wrong. I'm not complaining about 15 compensation. Frankly, I believe 15 talent has been undervalued and underpaid more often than not. The recent spikes and surges in IS salaries — far more than the net worth rise of a Gates, Ellison or Andreessen — best represents the revenge of the nerds. Software in the '90s has become a bit like Major League Baseball free agency. Even known mediocrities can command outrageous premiums in the marketplace.

But perennial double-digit growth in IS salaries must provoke market responses. Companies aren't comfortable creating a new economic elite within

their workforce. It's one thing for a salesperson on commission — a real revenue producer — to make more than the CFO. But a software jockey who's a wiz with Smalltalk? The guy who can flawlessly phase in a systems upgrade in less than 30 days instead of three months?

We can argue endlessly over relative values. But does anyone doubt that one reason many excellent programmers have left cushy Fortune 100 posts or jobs with Andersen Consulting is that they can easily double their gross incomes while retaining greater control of their time? (Indeed, hundreds of companies are sick to discover that they're pay-

ing \$100,000 in part-time consulting fees to programmers they had once wage-slaved for \$60,000 per year plus benefits.

So we will see new initiatives to crack the spine of this software wage inflation. You can be sure that we'll see an entrepreneur or 20 set up Internet-enabled remote diagnostics and maintenance sites in Bangalore and Budapest at prices that will put further pressure on the CSCs, Andersen and EDAs. Clearly, venture capitalists will put money in companies that promise to dramatically cut the human costs of IT systems. Do you think top managers will buy a system that is 40% less flexible in exchange for one that cuts life cycle costs by 60%? I do.

Let's face it: Most legacy systems — and today's Internet — were built with the idea of smart but

cheap intellectual labor in mind. Indeed, you could argue — and I will — that we would never have witnessed the evolution of enterprise computing if programmers in 1967, 1977 and 1987 had been paid wages comparable to today's.

We've seen paragails and paramedics become part of the human capital effort to manage legal and medical costs. We will inevitably see IT systems designed to enable a new class of "para-softs" capable of absorbing much of the time, costs and skills associated with software systems management.

Are you unhappy with managed care and the way doctors treat you at HMOs? Well, welcome to the brave new world of "managed software" where the incentives are similarly skewed to provide "the best" development and maintenance for "the best" price. Will this make corporations more computationally competitive? Probably not, but it will slow the rise of the median MIS wage. That's the idea. □

Companies aren't comfortable creating a new economic elite.



Schrage is a research affiliate at the MIT Media Lab and author of *No More Teams!* His Internet address is schrage.media.mit.edu.

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Briefs

Call center. Citibank and First Union Corp. have joined the Integrator Powerful Network, an online book consortium led by IBM and 17 financial institutions, including Interactive Financial Services Inc., people conduct PC-based banking or buy products over the Internet. Integrator officials said the addition of New York-based Citibank and Charlotte, N.C.-based First Union raises 25% of Internet banks in North America, with bank members will be able to serve the service.

IS in stock parcels. Whistler Corp. (Burl, Wash.) Internet Mail Ltd. has teamed up with AT&T Corp. to offer a new package notification service. The Electronic Shipping Advisory service will let package carriers send an electronic mail or fax message to each parcel to inform recipients exactly what is in the way. Carriers can get package updates from the system via the World Wide Web by using an add'l shipping number. The message will be sent over AT&T's global network.

Information provided. Comshare Data Systems, Inc. (Wellesley Hills, Mass.), a major supplier for custom software, has been acquired by data processing vendor Advanced Computer Services Inc., in Dallas. It is a management buyout at \$25 million.

The pace of outsourcing

Analysis of whether to outsource: 1 month

Issue requests for information, get responses: 1.5 months

Issue requests for proposal, get responses: 3 months

Choose finalist: 1 month

Negotiate contract: 1 month

Based on consulting firm's experience in outsourcing deals.

Source: Bill Information Group, Inc., Princeton, N.J.

Sharing GIS talent with world



User group saves with landmark lab sharing deal

By Thomas Hoffman

A CONSORTIUM of 200 chief information officers has reached a landmark agreement with an IT laboratory for discounted testing services that could save some members tens of millions of dollars in testing costs.

The partnership, formed last month between The Chicago Research & Planning Group (CRPG) and Client/Server Labs, Inc. in Atlanta, could mark the first time that an industry association has leveraged its purchasing clout to slash testing costs for individual members, analysts said.

With year 2000 hardware and software remediation accelerating, "Everyone is going to be testing, but not everyone will be testing," said Michael

Loh, sharing, page 45

Videoconferencing boosts productivity

► BankAmerica's call centers get linked

By Nancy Dillon

AGENTS AT BankAmerica Corp.'s new call centers no longer have to depend on ticker-tape-style reader boards for the information they need to do their job. Clusters of overhead televisions that show custom-produced content and videoconferences are replacing the boards as part of a plan to make the agents more productive.

The plan involves moving more than 3,000 call agents who work at the bank's National Consumer Assets Group (NCAG) into two new call centers.

S. David Sessions, vice president of information technology at NCAG in Pleasant Hill, Calif., said the \$4 million implementation should pay for itself in two years by slashing

travel costs and making workers more productive.

NCAG is a loan-by-phone and customer service group that processes home equity credit lines and other small loans. Its first fully operational new call center, which houses more than 2,000 agents, is in Brea, Calif.

A call center with 1,200 agents in Rancho Cordova, Calif., will be completed in a few weeks. Both centers have videoconferencing links to managers in San Francisco and Pleasant Hill.

TVs hang from the ceilings throughout the Brea and Rancho Cordova floors. Each of the monitors' 12 channels can show videoconferences with office managers, along with training videos, customer success stories, TV programs shown via satellite and real-time

CUSTOMER SERVICE

Data sharing app improves sales, service

By Bob Wallace

THE CALIFORNIA STATE Automobile Association (CSAA) is displaying a custom Windows application that lets its customer service representatives answer questions about its entire line of auto and home insurance packages and travel services.

The application has helped cut telephone time by letting representatives handle inquiries faster and has freed them to handle additional calls. CSAA officials said that has helped elevate customer service.

CSAA customer service personnel knew only one of the company's business areas. Customers who needed more information were handed off to another customer service representative or given another CSAA phone number to call or person to visit. CSAA determined that the quality of customer service, page 41



BankAmerica's S. David Sessions: Before videoconferencing, "we had to stop everybody's work and congregate in one place."

statistics reflecting call center productivity.

Sessions said the system could save NCAG as much as \$250,000 in travel costs in the first year alone. "When people want to take trips now, we ask

Videoconferencing, page 41

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- 35. Education
- 45. Wholesale/Retail/Trade
- 55. Business Services (except CP)
- 65. Government - State/Provincial/Local
- 75. Communications Systems/Public Utilities/Transportation
- 85. Manufacturing/Processing/Manufacturing
- 95. Distribution/Wholesaler
- 105. Headquarters of Computer Companies
- 115. Headquarter of Computers, Computer-Related Systems or Peripherals
- 125. Systems Integrators/Walls, Computer Service/Bureau, Software Planning & Consulting Services

10. Computer/Peripherals Dealer/Reseller

- 10. Computer/Peripherals Dealer/Reseller
- 11. Other

(Please check)

2. TITLE/FUNCTION (Circle one)

- 11. President/Owner/Chairman
- 19. Chief Information Officer/Var President/Asst VP/SVP/SCOP/President/Asst VP SVP/SCOP
- 21. Dir/Pg/PB Services, Information Center
- 22. Dir/Pg/Hw/Softw Sys. Dev./Tele Comm., LAN/Hip/PC Hw./Softw. Planning/Administrative Services
- 23. Dir/Pg/Sys. Development, System Administrators
- 24. Programming Management, Software Developers

41. Engineering, Scientific, R&D Tech./Planners

- 41. Engineering, Scientific, R&D Tech./Planners
- 42. Sys. Integrators/Walls/Consulting

CORPORATE MANAGEMENT

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- 12. Vice President, Asst Vice President
- 13. Treasurer, Controller, Financial Officer
- 14. Secretary, General Counsel, Other
- 15. Sales & Mktg. Management
- 16. Product Log./Accounting Pg.
- 17. Other Professional
- 18. Information, Computer/Journals, Books/Periodicals
- 19. Other/Titled Personnel

3. Do you use, evaluate, specify/recommend, purchase (Circle all that apply)

Computer Systems

- (a) PCs
- (b) Mac OS
- (c) Windows NT
- (d) OS/2
- (e) Windows
- (f) Unix
- (g) Novell/Netware

App. Development/Products

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- 35. Education
- 45. Wholesale/Retail/Trade
- 55. Business Services (except CP)
- 65. Government - State/Provincial/Local
- 75. Communications Systems/Public Utilities/Transportation
- 85. Manufacturing/Processing/Manufacturing
- 95. Distribution/Wholesaler
- 105. Headquarters of Computer Companies
- 115. Headquarter of Computers, Computer-Related Systems or Peripherals
- 125. Systems Integrators/Walls, Computer Service/Bureau, Software Planning & Consulting Services

10. Computer/Peripherals Dealer/Reseller

- 10. Computer/Peripherals Dealer/Reseller
- 11. Other

(Please check)

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- 19. Chief Information Officer/Var President/Asst VP/SVP/SCOP/President/Asst VP SVP/SCOP
- 21. Dir/Pg/PB Services, Information Center
- 22. Dir/Pg/Hw/Softw Sys. Dev./Tele Comm., LAN/Hip/PC Hw./Softw. Planning/Administrative Services
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41. Engineering, Scientific, R&D Tech./Planners

- 41. Engineering, Scientific, R&D Tech./Planners
- 42. Sys. Integrators/Walls/Consulting

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- 16. Product Log./Accounting Pg.
- 17. Other Professional
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Computer Systems

- (a) PCs
- (b) Mac OS
- (c) Windows NT
- (d) OS/2
- (e) Windows
- (f) Unix
- (g) Novell/Netware

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- (a) Yes No
- (b) Yes No
- (c) Yes No
- (d) Yes No

4. Do you use, specify/recommend, or approve the purchase of Internet products and/or services?

- Yes No

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Sharing GIS talent with world

CONTINUED FROM PAGE 24

dreds of properties worldwide. Another new customer, Pacific Gas & Electric Co. in San Francisco, needs access to massive quantities of data stored at various power-generation sites around California.

"As a consulting company we always used information technology to support our clients and work efficiently in the environmental area," said the technical director at Harding Lawson's applied information technology group in Denver.

"Then we realized we had clients who had very specific needs for customized applications," which have become a prime revenue-generating initiative, the director said. For example, Harding Lawson has created a separate strategic business unit to develop and market the customized GIS systems.

NO NAMES, PLEASE

So far, it's paying off — so much so that company President Sandy Reiss insisted that the technical director and other technical employees interviewed for this story not be identified by name. Otherwise, Reiss said, competitors would try to steal them away just as the enterprise begins to turn a profit.

In the company's most recent fiscal year, which ended in May, the new business unit generated \$1.3 million in net revenue. This year, company officials expect that figure to more than double.



"We've just finished a business plan, and the goal is to have 40 to 45 people working on different projects by the end

of May," said Chief Information Officer Hollis Owen. He is temporarily heading the unit until a permanent executive is hired.

Staffers in the unit will focus on producing custom decision-support software that lets users access and manipulate spatial and text data that typically resides in several different systems scattered across a

client's enterprise.

An oil company, for example, may have one database that contains digitized maps of wells and several other databases that contain drilling and environmental data.

"We can set up an application that lets a user click on a well on the map, then ask a question about it, and our software queries the databases to get the answer," said the unit's technical director. Previously, he said, with the same information housed in several different electronic databases and in paper-

based files, it could take days or even weeks to assemble for review.

No one knew that better than environmental engineering consultants, who planted the seed for Harding's new business, said Vice President Fatalia England. "We were redoing our five-year plan and asked employees what opportunities they saw out there. What a very large number of people came back with was ways they were using information technology to differentiate themselves from their competitors," she said. □

Customer service

CONTINUED FROM PAGE 38

Customer service suffered as a result and that there were many lost opportunities to facilitate sales across product and service lines.

Recognizing that, Autumn Wagner and her team spent 18 months creating the Online Guide, a Windows 95 application that gives customer service staffers quick access to the latest data on all CSAA offerings. The Online Guide was first deployed two years ago.

"Now personnel double-click on an icon, and a menu pops up that they can navigate through or use traditional help functions like search," explained Wagner, manager of human resources information systems at CSAA in San Francisco. "Users can access just the piece of information they need instantaneously."

CSAA . serves 3.3 million

members in California, Nevada and Utah and insures more than a million people. In addition to auto and home insurance, it offers a wide array of travel services. CSAA has 1,800 customer service staffers.

An evaluation of the application showed that CSAA now provides customers more information faster. It found that about 75% of customer service staffers without the Online Guide took two to four minutes to get information, whereas 80% of those with the Online Guide reported that it took 30 seconds at the most. And 35% said it took only a few seconds if the Online Guide was one of their bookmarked sections.

"The more you become familiar with it, the more you use it, because it's easy to use and provides immediate access to the information you need," said Myrtle Hudson, a district manager at CSAA's Grass Valley, Calif., office.

Strategic Evaluation and Associates LLC, an independent consultancy in Fort-Lake, Ore., which performed the evaluation, said the Online

Guide is successful because CSAA invested so much effort prototyping it. "CSAA learned to put depth into the system so that its workers could easily access all the data they needed," said Teri Land, a partner at Strategic Evaluation.

The Online Guide and a companion application that lets CSAA specialists update it won a customer service application award from Microsoft Corp. □

Lab sharing deal

CONTINUED FROM PAGE 28

have the infrastructure to devote to testing," said Paul Johnston, an analyst at International Data Corp. in Framingham, Mass.

Information technology partnerships designed to achieve economies of scale — even when it involves cooperation among competitors in the same market — is a trend that's coming to the services industry, Johnston said.

Under the agreement, Client/Server Labs will offer CRPG members a variety of services, including a test subscription for performance results on gear such as RAID storage subsystems and middleware. Client/Server Labs also will work with CRPG members on multiclient test studies, custom testing for individual members and IT benchmarking.

"The whole value of the lab is that we have now the capability

of creating a very sophisticated repository of data on tests being performed," said Dick Arns, executive director of the Chicago-based consortium. The group's members include manufacturers such as Kraft Foods, Inc. in Northfield, Ill., and American National Can Co. in Chicago.

Under one of the pricing scenarios, Arns said, CRPG members would likely pay an annual fee of between \$3,000 and \$10,000 to gain access to a handful of tests.

The partnership seems cost-effective said Don Sardic, chief information officer at BAX Global, a \$1.5 billion transportation and logistics management company in Irvine, Calif., which belongs to the CRPG.

Client/Server Labs' services "will allow us to test different types of technologies we're thinking about using," Sardic said. That way, BAX doesn't

have to "go out and re-create the wheel." BAX recently launched a three-year effort to build a multilayer system to provide improved supply-chain and transportation management services. The new architecture, Sardic said, is expected to improve customer service and help BAX run its operations more efficiently.

Using Client/Server Labs to test its implementation will help, Sardic said. He said he expects BAX to save in the "tens of millions of dollars" in equipment, training fees and testing because the company doesn't have to build a lab of its own.

To make the testing deal work, the CRPG will need to prioritize which members get access to the laboratory first, analysts said. A second challenge will be to duplicate each member company's network configuration and re-create "all of the defects and performance hits," said Michael Barnes, an analyst at Hurwitz Group, Inc., a Newton, Mass.-based consultancy. □

BankAmerica videoconferencing

CONTINUED FROM PAGE 38

them. "Is this something that could be handled with a video-conference?" he said. The video monitors are easier to read than the older, text-only reader boards, Sessions said, and the depth of information available is much greater.

Soon, videoconferencing will let managers at the call centers hold weekly divisionwide meetings while call agents remain at their stations. "Before, we had to stop everybody's work and congregate in one place," Sessions said. Allowing agents to remain on the floors will save three to four hours of productivity per person per month, he said. "With over 5,000 agents, that's a lot of hours saved."

Ed Buckingham, an analyst at International Data Corp. in Framingham, Mass., said NACAG's hope to recover the \$4 million investment in two years is reasonable. He said travel-related savings is the primary benefit of enterprise-level videoconferencing, and the time saved on travel can be put back into work.

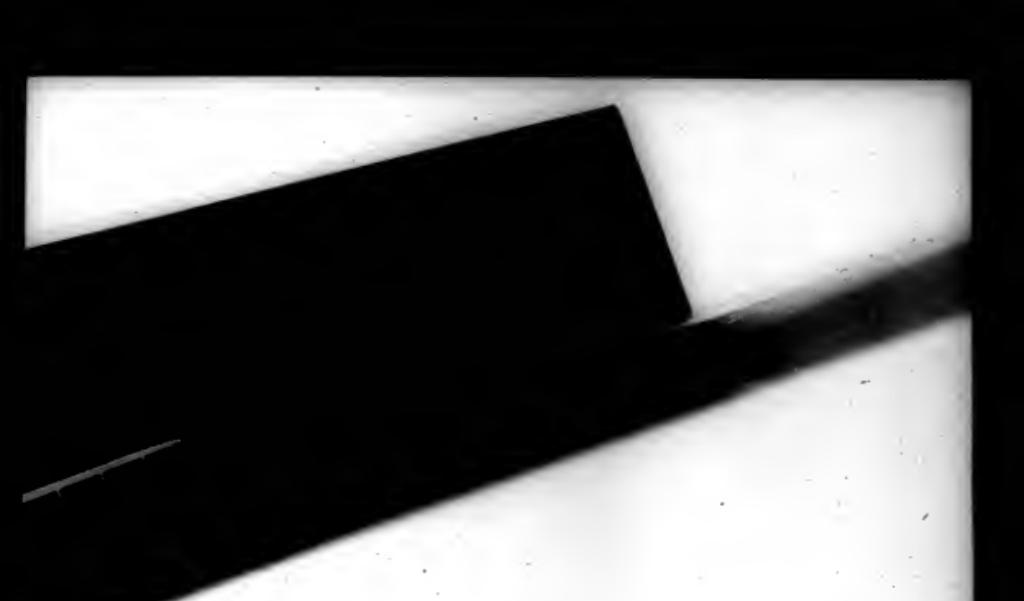
Avistar Systems LP in Palo Alto, Calif., made the video system. The hardware infrastructure includes more than 40 two-way videoconferencing seats, more than 150 TV monitors and two 12-channel cable systems. Sessions said he chose Avistar because he wanted studio-quality conferencing and low-cost distribution. □

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Briefs

SENIOR 'NETIZENS

I 83% of older 'netizens log in at least once per day

I Older 'netizens are more likely to buy products online than younger users

I Older 'netizens use E-mail more often than younger users

Basic LOSO (Excl. users over age 50)

Source: Efrat, Inc., Rockville, Md.; Total Age Media Inc., San Francisco

Software tokens shield data

► Change in safeguards saves company money

By Sharon Machlis

OPPENHEIMERFUNDS, INC. is moving to software-based password generators instead of handheld hardware devices as a way to save money while safeguarding data, said Jim Patterson, vice president of security and telecommunications at the financial firm in Denver.

In the past four months, the company rolled out the software tokens to about 400 mobile users. The tokens cost about \$15 each and replace hardware tokens that cost about \$50 apiece, Patterson said.

MAKING IT EASIER

Both the software and hardware versions generate one-time passwords for remote users through a synchronous exchange initiated by the server. The handheld hardware devices had to be carried on the road, where they could be dropped or lost, Patterson said. That added to the cost of the system. The

devices also had to be tracked separately from the laptops they were used with, expanding the amount of inventory to monitor. The software-based system, from Aventis Technologies, Inc. in Rockville, Md., is "easy for me to administer," he said. And, users like it because the software enters the password automatically.

The hardware tokens generated a password on the handheld machine that users had to type in to a laptop for remote access.

Software tokens are "definitely easier to administer, because people don't lose them," said Philip Carden, managing consultant at The Registry, Inc., a consulting firm in Hoboken, N.J. They are good protection against network eavesdroppers and for moderately sensitive data. But hardware tokens provide greater protection against skilled industrial spies because, if a laptop is stolen, there still is no way to generate the needed password.



The one-time passwords are aimed at thwarting "sniffers" that read packets or keystrokes over a network. They also deal with the problem of unselected passwords that can be easy for a hacker or automated password-cracking program to guess.

HANDLING IDIOSYNCRASIES

The new tokens are among several security programs. Patterson said help him keep a tighter rein on a network that connects Unix, Novell, Inc. NetWare and Windows NT.

Software tokens, page 46

Frequent-surfer programs help pull in the hits

By Mitch Wagner

TRAVELERS IN cyberspace can make it cheaper for Internet users to travel in the real world, as companies launch incentive programs to help drum up repeat business online.

Companies are rewarding consumers with frequent-flier-like points or free software to keep them coming back to sites or to reward desirable behavior such as buying products on the Internet. In the latest entry in frequent-surfer programs, NetCentives, Inc., in San Mateo, Calif., last week announced a plan to allow online merchants to offer customers actual frequent-flier miles online, from any of six major airlines, including American Airlines and Delta Air Lines.

ALIAS, CONTINUITY

"At their hearts, these things are continuity programs designed to encourage people to participate more in business on the Internet," said Denny Waldner, vice president of frequent-surfer programs, page 46

Q: Is the Internet addictive?



► Psychologist calls 'net mania an illness'

By Kim S. Nash

WE MAY NOT be wild-eyed or foaming at the mouth, but an Internet addict probably lurks in your midst. So said Dr. Kimberly Young, a professor of psychology at the University of Pittsburgh in Bradford, Pa., in an interview with Computerworld.

After a three-year study of 396 'net addicts' — whose average time online per week is 38 hours — Young concluded that there is an illness among us. Young's findings, and subsequent recommendation that the phenomenon be added to medical books, are controversial. But, she said, "I didn't

Internet addicts, page 46

About a half dozen companies offer incentive programs online

Software tokens protect data, save users money

CONTINUED FROM PAGE 45

servers. "Each platform has its own idiosyncrasies," he said, which makes implementing even the simplest security policies governing user IDs, passwords and network privileges a challenge.

Setting up may be relatively easy, he noted; the trick is staying current. Many companies rely on annual security audits to look for problems. But that means holes can develop between audits.

Systems administrators may test

something and then forget to remove a user identity, or "back door," he said. In his previous job at a bank, for example, Patterson said he discovered one Unix system that had been running for more than a year with all user IDs without passwords. At another job, a software program that was supposed to have 15 modules actually had 16 — the extra one featured a back door planted by an unhappy employee.

DEFINING POLICIES

Patterson uses network monitoring software, also from Axent, that will allow him to define his security policies and check daily to make sure every system complies. "When we first installed it, we found things that would make your toes curl," he said.

It takes some initial time investment to set up properly and define all the policies for each platform, but Patterson

said the automated security checks have saved enough time to justify the initial investment. Now he gets daily reports on every system, which ensures that all IDs have passwords, that system backups have been done and so on. The software helped him catch an off-site data-security vendor who hadn't backed up the emergency-recovery system daily as promised.

Not all the software Patterson has tried has worked out, however. The Distributed Computing Environment security model, developed by the Open Software Foundation, touted as "all things to all people," has also been "very difficult to administer," he complained.

Patterson found similar problems with Kerberos, a ticket-based network authentication system that uses a few hundred bytes of data to identify a user. "It really hasn't caught on much," he said. "It's extremely complicated — very expensive to implement. I think you get a lot of bang for the buck if you use it in a specific application" vs. a whole enterprise. □



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Frequent-surfer programs

CONTINUED FROM PAGE 45

rect marketing at Hello, Direct, Inc. in San Jose, Calif. Hello, Direct sells telephone products to small offices and consumers through a catalog and its World Wide Web site. Hello, Direct plans to allow customers to redeem MyPoints from MotivationNet, Inc. in Schaumburg, Ill., for products at the Hello, Direct site.

Motivations and MotivationNet are among about a half-dozen companies that offer incentives programs on the Internet. The business model can help companies get business value from the Internet by encouraging repeat business. But the model isn't without peril. PowerAgent, Inc. in Menlo Park, Calif. — which offered cash incentives to customers willing to visit its Web site for ads from PowerAgent advertisers — earlier this month laid off more than 50 of its approximately 60 employees when it failed to make a round of financing.

PROMOTING ONLINE

"These are valid business models. Online promotions are an excellent idea," said Marc Johnson, an analyst at Jupiter Communications, Inc. The online programs are modeled after the old Green Stamps promotions, where consumers earned stamps for purchasing groceries and other goods, which they pasted into a booklet they could eventually redeem for appliances and other products.

CyberGold, Inc. in Berkeley, Calif., launched in the summer of 1996, offered points to merchants, who could then pass them on to consumers. The consumers could redeem them for cash or merchandise.

Publicity about CyberGold and other incentive programs has focused on the way that some merchants rewarded cus-

tomers with 50 cents' or a dollar's worth of points for simply reading an ad and answering some questions about it.

But John Holland, vice president of brand marketing at CyberGold, said reading ads is just one activity for which companies can use CyberGold to reward customers. They can also use it to reward customers for making purchases registering for a site or filling out market surveys.

David Marshak, an analyst at Patricia Seybold Group, questioned the value of paying consumers for reading ads. "Do I want people who value 50 cents to be reading my ad?" Marshak asked. "We have not seen any information that this model is working." □

AT A GLANCE

Hello, Direct, Inc.
 San Jose, Calif.
www.hello-direct.com

I Sells telephone products through catalogs and on its Web site.

II Consumers can buy merchandise by redeeming "frequent-surfer" points offered by MotivationNet.

III Hello, Direct pays a commission to MotivationNet for the sales. The company believes this will drive customers to its site who will later buy products at full price.

Gates opens up for questions

Those who stayed until the bitter end of Microsoft Corp.'s Professional Developers Conference in San Diego two weeks ago got a chance to ask the top man, Bill Gates, some questions. Excerpts of his question-and-answer session follow. Computerworld Senior Editor Carol Sliva, who attended the event, paraphrased attendees' questions and edited Gates' answers for brevity from a Computerworld transcription of the event.

QUESTION: What is your opinion on the newly proposed government restrictions on domestic cryptography?

GATES: I spent a fair portion of this week on the phone talking to people in Congress about what a bid thing it would be in many ways if the new legislation that some people are considering were passed.

To date, we've had a huge problem, because we can't export decent encryption. We're stuck at 40 bits, which is easy to break. And foreign software competitors are shipping lots of 128-bit software. So our customers outside the U.S. say, "Hey, you're providing us inferior products." And we have to say, "Well, it would be a felony to provide you with decent encryption."

Some of the domestic law enforcement people came in and said, "No, instead of freeing up the export, we're going to restrict domestic use of encryption. And we're going to insist that every software product be restructured so that there is a back door, so the government can get in and see exactly what you're saying, without you knowing about it."

It really doesn't address the fact that people who want encryption and use it to hide bad activities will still be able to do that. So I think this is a serious issue that hasn't gotten as much attention as it deserves. It's not just a serious issue for everybody in the software industry. It is an issue of embracing the Information Age, which other countries have done. And it's an issue about civil liberties.

Q: Should developers continue investing in ActiveX controls or move toward dynamic Hypertext Markup Language (HTML)?

GATES: Well, we believe ActiveX controls are the way to get the most flexibility in terms of having code run on the



client. You've got really three levels. You've got HTML, including dynamic HTML. You've got the scripting capability. And it's important — there's a big, big difference between that and Java. And then finally, if you want to write in any language, we have the ActiveX controls.

We do think that the biggest component software business out there today is ActiveX controls. . . . We think the momentum there will continue to grow and that in a wide-area sense, most people will stick with dynamic HTML and scripting, as opposed to either Java or very, very rich controls.

Q: Do you write code anymore?

GATES: I wish I got a chance to write more code. I do mess around. They don't let my code go in shipping products [laughter]. They haven't done that for about eight years now. When I say I'm coming in to write this over the weekend, they don't really believe me quite as much as they used to.

But certainly when it comes to the new things we're doing, I always thought COM, the source code, was a little bit verbose, you might even say arcane or ugly. But, COM — I'm very excited about that. I mean, it really is sort of direct access, using these component libraries in the right way. And certainly I'll be able to clean up some of the things I've hacked around with.

Q: Microsoft reportedly has banned the use of Java applets on its World Wide Web site, but at this conference it didn't give the impression that it is discouraging the use of Java. Can you comment on that?

GATES: When people use the word Java, they can mean two different things. They can mean Java the language, which we think is a good language — and we believe we've got a great implementation of that language. The second thing they can mean is that instead of taking advantage of the computer that somebody owns, you just use the vanilla set of runtime services. So if I own a computer, whatever it is — a Macintosh, Windows computer — when you're shipping that application, what you're saying is, "We do not use the user interface, or the clipboard, or the color management, or the high-speed graphics."

SHORT

Auto-return

Boston, Ma.-based TenFour US, Inc. has announced TFS WebWalker, software that lets users retrieve information from a World Wide Web site without surfing the Internet. The software,

which is an add-on option for the company's TFS Gateway interface among disparate mail systems, delivers information from the Web either to a user's desktop or electronic-mail inbox. TFS WebWalker will ship in the fourth quarter.

For rich applications, do you ever want to take advantage of an operating system, or take advantage of a database or a middleware product? And it's our view that people are going to keep calling pieces of

software. . . . So you'll find us very agnostic about languages. We're going to continue to evolve Visual Basic. We think other languages that we're not involved in, there will continue to be code there.

It's very hard to go to a chief information officer and say, "It's your lucky day. Rewrite all your applications. They'll only be a little bit slower." □

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Internet addicts seek help

CONTINUED FROM PAGE 45

start this to make trouble."

CW: Why does Internet addiction happen?**YOUNG:** Fantasy games and chat rooms are exciting. Beats real life. A lot of addictions are based on pleasure-

seeking behavior. It's not the alcohol people like, but what it does to them. The internet has become an escape mechanism for some people. For people who don't get addicted, it's just a tool. They don't see the fuss.

CW: Your study was conducted over three years. Could you see the addiction growing in people?**YOUNG:** I did see that. They called me when they were at end of their rope. They wanted validation because

no one believes it's real.

CW: You presented your findings to the American Psychological Association in August 1996. How were you received?**YOUNG:** I'd say "mixed." I have a lot of supporters out there. I get a lot of people from the computer science field [who] concur. They recognized it as a problem years ago, but no one took it seriously until it hit the commercial market.

Other people say I'm blowing it out of proportion. I don't necessarily compare Internet addiction to drug abuse. It's more like pathological gambling — a behavior addiction [where] things can get out of hand.

A three-year study of 396 'net addicts showed that the average time online per week was 38 hours.

CW: Isn't it a long, arduous process to revive mental health standards?**YOUNG:** There was a man named [Robert] Custer who in the early 1980s developed the idea of compulsive gambling, and no one believed him. It took 14 years from his original statements [until the illness's] inclusion in the medical lexicon. It will take a decade or two for research to be conducted [about Internet addiction].

The criticism is based on opinion. [Skeptics] have done no research that disconfirms it exists; they just don't agree with it. I'm not saying it's a rapid epidemic. But there's a tool out there that's causing problems. There are enough cases where you have to say, "Wait a minute." This is not like a phone or a television. It allows people to create new relationships and abandon marriages.

CW: Given that most people on the Internet access it from work — or at least that's where they get their first taste — what responsibilities does the employer have here?**YOUNG:** To figure out good policies on Internet use. Employees are going to use it for personal things. They just are. The problem is, it's so easily misused, and the company fires you right away if you [abuse net privileges]. That is not a good answer. Companies need to know they're presenting a temptation.

Employee assistance programs need to get involved with this addiction. Telling an alcoholic to stop drinking doesn't work. They need intervention. I encourage companies to consider that, when you give employees online access, there will be some who have problems with it. You need to devise an intervention instead of just firing them.

CW: Will treatment for Internet addiction become a standard health benefit to years from now?**YOUNG:** There will be some validation of the illness. I'm just not sure what form that will take. G

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Enhanced reliability: Maximum Peace of Mind
With SmartSlot-equipped Smart-UPS rack-mount server and internetworking equipment protection, you can diagnose problems before they can cause downtime. For instance, if high temperatures threaten your equipment or activate sprinklers in your server room, you can configure PowerChute™ plus to alert you by pager, notify users on-screen, then safely shut your server down before data is lost or hardware is damaged. You can even wire your security system right into your NMS to keep your hardware safe from vandals, thieves or from unauthorized access.



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The Enterprise Network

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Briefs

Global directories are expensive

When implementing a global directory, an organization with 50,000 users can expect to invest \$2.5 million to \$3 million for acquisition and deployment in the first three years.

Source: The Redman Group, Palo Alto, Calif.

Madman users plot to manage E-mail

► EMA group wants users to track messages

By Barb Cole-Gemelli

FOR E-MAIL ADMINISTRATORS, the idea of end users tracking the whereabouts of their own electronic-mail messages seems like a fantasy.

For one thing, it could mean the end of the "I sent it, but it never got there" technical support call. A subcommittee of the Electronic Messaging Association (EMA) in Arlington, Va., is working to make that possible. It is giving anyone in the organization with a World Wide Web browser access to performance and management information about their E-mail. The EMA's Messaging Management Committee seeks to

MIBs collect operational data on networked devices and applications

marry E-mail management and the Web. Specifically, the group plans to build a Java applet that would collect data from the Mail and Directory Management (Madman) Management Information Base (MIB) and deliver it to Java-compliant clients.

MIBs collect operational data on networked devices and applications for monitoring by management tools using the Simple Network Management Protocol.

The EMA group also is considering developing a separate Java-based message-tracking specification, possibly based on SunSoft, Inc.'s Java Management Application Programming Interface. That specification is

rate Java-based message-tracking specification, possibly based on SunSoft, Inc.'s Java Management Application Programming Interface. That specification is

FAQ: Madman MIB

Q: What is the Madman MIB?

A: Madman is a collection of three Management Information Bases that deliver E-mail monitoring and performance data and directory information to SNMP-based management systems.

Q: Is Madman widely implemented?

A: It is supported in most messaging systems.

Q: How will adding Java hooks to the Madman MIB change things?

A: Any user with a Java-enabled client will be able to view the information.

Q: What is the benefit of managing E-mail within a World Wide Web browser?

A: It gives audiences much broader access to the monitoring information. For instance, end users could track the location of a message they sent.

used for building cross-platform management applications based on Java.

Bridging the gap between the Madman MIB and the Web could mean the end of managing messages from the glass house, said Bruce Ernst, a product line manager at Lotus Development Corp. in Cambridge, Mass., and a member of the EMA committee. **Distributing Madman**, page 56

IBM host gateway tool still trails rival

By David Strom

IBM'S LATEST VERSION of its Web/S370 gateway software is making progress, but it is still trying to catch up to many of its competitors.

Viable alternatives include Corridor from Stillwater, Okla.-based Teuthor & Associates, Inc.; Salvo from Ottawa-based Symware, Inc.; and InfoConnect Gateway, page 56

HP embraces desktop management



Desktop Administrator can manage and track user hardware or software through an object-oriented interface

By Patrick Dryden

HEWLETT-PACKARD CO. this week will close a gap in its OpenView tool chest with products designed to reduce the cost and complexity of managing PCs.

HP will launch OpenView Desktop Administrator, a hardware/software management suite based on Norton Administrator for Networks, a product it acquired in April from Symantec Corp.

The goal is to help central administrators distribute software, track inventory, manage configuration, meter usage and take control of hundreds or thousands of PCs in conjunction with key OpenView tools for managing systems and networks.

Desktop Administrator lacks sophisticated integration with HP's other tools in this release, and its enhancements were being developed before the transition, said product manager at HP in Palo Alto, Calif. Even so, HP is tackling the desktop management problem the right way, analysts and users said.

Despite all the current interest in integrated enterprise management frameworks, it's more important to focus on specific ways to manage the client, the single most expensive part of the product.

REVIEW: Host on Demand Version 2

OVERALL GRADE
B+
Research Triangle Park, N.C.
<http://www.hostondemand.com/host/>

Price: \$199 per user

- Provides access to host systems, including says and s390
- Gateway incorporates authentication for added security

- Could use better documentation
- Too many submenus for launching lots and pieces of the product



GTE

Madman users plot to manage E-mail

CONTINUED FROM PAGE 53

management information to a wider audience would ease the burden on IS by allowing end users and administrators in far-flung offices more ready access to performance and tracking data. It also could help companies that are saddled with multiple mail systems that lack a common management tool.

GROWING DEMAND

"The lack of management tools is a real drawback for most messaging systems and especially Internet mail systems," said Patrick MacNamara, a systems administrator at IBM Micro, Inc., in New York.

The record company uses third-party products to monitor its Lotus CC Mail network.

But growing demand for Internet connectivity is putting pressure on the company to get

a handle on messaging management that would span across the Internet, he said.

"Today, when it comes to Internet mail, we can't guarantee delivery, and we can't track messages," MacNamara said.

The Madman MIB is a natural place to start because it is supported in most messaging systems, members of the EMA committee said.

Committee chairman, Gordon Jones, lead scientist at The Mitre Corp., a federally funded research center in McLean, Va., said the group hopes to offer a public demonstration of the Web-based management work at the EMA's annual conference in April.

The group might post its ap-

plete, which would work with any Madman-compliant mail system at the same time he

IBM tool plays catch-up

CONTINUED FROM PAGE 53

Host Publishing from Attachmate Corp. in Bellevue, Wash.

IBM's software called Host-On-Demand (HOD) adds features that were missing from the first release. That includes authentication for mainframe access from within a browser and TN3270 emulation.

If you don't need the new features, you can save some time by using Version 1.0. That version is part of Netscape Communications Corp.'s bundle with Communicator 4.0.

IBM has also added a series of application interfaces to automate browser-only connections to the mainframe. The interfaces are Host Access Class Libraries for Java and they are documented in the usual myriad IBM fashion with few examples.

The libraries take a new twist on host-session automation by providing direct access to the host-session data without an emulator.

Prior to this interface most of us used the Enhanced High Level Language Application Programming Interface to do these tasks. That interface required a host emulator running in the background to scrape its screen data. And it was pretty particular about the type of emulator and platform it would run on. The code for that interface was tough to debug and test. It required lots of skill to trap errors and make it work.

The new Java-based interfaces work better, but they are both a blessing and bane. First, they reside on the server and download to the clients as they are needed. That makes it easier to maintain applications written to the interface. Second, IBM has widened the interface's potential appeal by making it possible to automate 3270, 5270 or VT-

100 Telnet sessions with the same set of tools and Java beans.

The downside is that you need to know a lot more about Java than you'd probably like to.

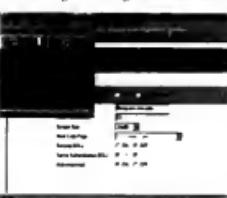
You'll want to read up on Java security and running signed vs. unsigned applets, decide whether to download the client code for HOD or load it locally, and learn how to run a secure web server and how to obtain a trusted key pair. If you are new to Java, this isn't the place to start learning these things, and

the latest version of the Java Virtual Machine.

We also had trouble with intermittent crashes when running HOD under different versions of Microsoft Corp.'s Internet Explorer and Navigator.

There are several ways to configure HOD, and that's also part of the burden. You can use HOD as a simple 3270 emulator inside a browser and connect directly from your PC to the host via TN3270. You can also set up a gateway to authenticate users on a secure web server and connect that gateway. You can configure several sessions so they show up as icons inside a browser window, which would make it easier for users to find the right sessions. I was a bit concerned about the many submenus that were created by the installer. There are far too many for my taste, and that will confuse users down the road.

All in all, HOD reminded me of the early days of 3270 LAN gateways, when products would crash, certain keystrokes weren't emulated properly and response times were sluggish. HOD represents a fair effort by IBM to keep up with the pack, but other products do a better job. It bears watching, though, especially if its Java-based interface catches on and is supported by other emulation vendors. □



Host-On-Demand is a Java-based client that can connect to several host systems

you might be better off with other products that use ActiveX and Visual Basic.

Yes, the product works across various operating systems, but getting HOD to do so will require effort. Trying to understand what the underlying browsers and operating systems support becomes a real challenge before you can deploy HOD. For example, you'll need the latest patches and fixes to Internet Explorer 3.0a or 4.0, or you can run Version 4.0. But it supports Navigator 3.x and 4.0.

And if you want to cut and paste from inside a host session, you'll need the latest Version 4.0 browsers with the lat-

est Strom is a freelance writer in Port Washington, N.Y., and publisher of Web Compare (www.strom.com).

Desktop management

CONTINUED FROM PAGE 53

of total 15 cost," said Kurt Schlegel, a research analyst at Meta Group, Inc., in Westport, Conn.

Most important, HP now offers "a scalable desktop management product with robust architecture underneath that can really be used," said Rich Plak, director of systems management research at D.H. Brown Associates, Inc. in Port Chester, N.Y.

That's what John Hirt, director of client services at Elf Atochem, Inc. discovered when he implemented the prior version of this suite three months ago.

"I could kick myself for not adopting it sooner," Hirt said. "This has saved us a tremendous amount of manpower and trouble supporting our 3,500 PCs."

For example, rolling out a suite of office applications to 1,000 users at the chemical manufacturer's headquarters in Philadelphia took nearly seven months and a visit to every PC.

But through inventory software distribution and remote control functions, two operators installed a browser and less than seven weeks to connect those

users to the company intranet. "Now we can handle change much quicker than before, with better records for the help desk to provide support and for finance to track desktop assets," Hirt said. He expects to upgrade next month to Desktop Administrator.

Rudimentary integration with other OpenView tools helps users avoid the "tough implementation" of enterprise management products, such as Unicenter TNG from Computer Associates International, Inc. and TME from Tivoli Systems, Inc. Schlegel said.

Pricing starts at \$67 per node for up to 250 nodes.

Desktop Administrator can send alerts to HP's IT Operations console for correlation with system and network events. It also links to HP's IT Administration and to the Windows NT version of Network Node Manager so operators can click on a map icon and see properties of that desktop or server.

HP officials said they plan next year to integrate parts of the PC Common Operating Environment system management tools. □

INTEL CORP. SEEKS broader acceptance of software that makers of desktop and mobile PCs can offer to make their hardware more manageable.

Launched nearly a year ago, LANDesk Client Manager required Intel's monitoring console and proprietary protocol to work. A version introduced last week supports several standards so vendors can more easily cus-

tomize alert and control capabilities for their users. The new version of Intel's management interface is based on the Hypertext Markup Language to simplify the addition of new features, such as sensing problems with a unique storage device or detecting attempts to open the case. Certificate-based authentication can secure networked systems from unauthorized access. LANDesk Client Manager supports the Simple Network

Management Protocol and the Desktop Management interface to managed PCs can trap and send event information to diverse monitors.

Gateway 2000, Inc., IBM, Packard Bell NEC, Inc. and Toshiba America Information Systems, Inc. all support Intel's software. But leading suppliers such as Compaq Computer Corp. and Hewlett-Packard Co. provide their own management software. □

By Pamela Drayton

LANDesk Client Manager requires Intel's monitoring console and proprietary protocol to work. A version introduced last week supports several standards so vendors can more easily cus-

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Lucent takes aim at large users

By Matt Hamblen

LUCENT TECHNOLOGIES, INC. IN Murray Hill, N.J., hopes to expand the market for its red circle brand by enticing large businesses to buy its recently announced data networking boxes and software.

Whether Lucent can go beyond its role as a major telephone switch provider — the company reported \$3 billion in revenue last year — and become one of a handful of leaders in data networking is open to debate, analysts said.

But one Lucent customer plans to at least test the company's new high-end MX1000, a 10G bit/sec. multiservice switch. "You don't really think of Lucent as a data vendor, but they are becoming that in a lot of people's minds," said Mike Myrick, manager of network devel-

Core switches — which are often found in buildings run by local and long-distance carriers — are "big and fast and dumb," Pultz said. They must be able to direct traffic to other carriers on the pathway and handle much more traffic

at once. "Lucent has been mostly known for its carrier-class core switch and didn't have a lot of investment on the enterprise level," he said.

Analysts said Lucent needs to add

IP routing and switching to be taken seriously as a corporate internetworking vendor.

In response, a Lucent spokesman said the company is likely to make several acquisitions in the next two years to fill its product gaps.

Lucent last year acquired Agile Networks Group in Concord, Mass., and Agile engineers developed the Lucent AX500, an ATM switch for LANs. □

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opment at the University of Mississippi in Oxford.

"Lucent is [the home] of Bell Labs, and that's where a lot of inventions and innovations came from. I feel confident with that background," he said.

Another user, Greg Ruttman, a telecommunications manager at Commercial Financial Services in Tulsa, Okla., plans to test Lucent's upcoming OneVision 2.0 software, a tool for managing services and devices by several vendors over a network. That product is expected to ship this month.

All the data networking products will be shown at Network/Interop '97 this month in Atlanta.

The MX1000 may be the most significant of the recently announced Lucent products for large business users, analysts said. With a starting price of \$44,000, it will sell for 25% less than comparable products from competitors such as Cisco Systems, Inc. and StrataCom, Inc., both in San Jose, Calif., said Jay Pultz, an analyst at Gartner Group, Inc. in Stamford, Conn.

The MX1000 will provide Asynchronous Transfer Mode (ATM) switching. It will interoperate with other Lucent products. Bay Networks, Inc.'s routers and switches, and devices by other vendors. The MX1000 is an "edge" switch, designed to sit on the edge of a company's network and connect it to the wide-area network. Edge switches must be able to interface with ATM and non-ATM traffic, converting all data into a common format before sending it to a core switch, analysts said.

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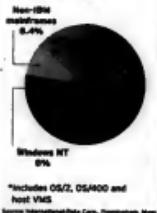
Software

Databases • Development • Operating Systems

Briefs

Worldwide multiuser database revenues by operating environment

Total 1996 revenue:
\$9.2 billion



Microsoft breaks proprietary line

By Sharon Gaudin

MICROSOFT CORP. is looking to take its data access capabilities cross-platform this week.

The software giant is releasing components today that, when used with its application development tools, should enable users to access a wide variety of database and Internet information, even if the database doesn't run on Windows NT or a SQL server.

The components, which are now stand-alone programming elements, are expected to be delivered in the next versions of

Microsoft's tools, including Visual Basic, Visual C++, Visual Studio and Visual J++.

"That will be pretty useful because we deal with a lot of database-oriented issues," said John Hoover, a senior software engineer at Rochester, N.Y.-based Johnson & Johnson Clinical Diagnostics, which uses Microsoft, Oracle Corp. and mainframe databases.

"Right now, we have to create our own components to make those connections. This will save us time, and since it will save us money," Hoover said. The components can be

downloaded free from Microsoft's World Wide Web site at www.microsoft.com.

This move comes a week after Microsoft announced it was enhancing its state of application development tools so that applications built with them would be accessible from any

Microsoft, page 66

• Maintenance management systems

Field workers get wired

By Randy Weston

MAINTENANCE management software is hitting the road.

Project Software and Development, Inc. (PSDI) in Cambridge, Mass., is rolling out a version of its maintenance management software system that will run on handheld devices. Competitor Indus International, Inc. in San Francisco has had a similar product on the market for several months.

The software was designed for industries such as utilities, in which maintenance work is highly regulated and workers in the field or at remote sites must

track it so their employers can demonstrate compliance.

Maintenance management software in general is used to manage and track maintenance work orders and schedule regular maintenance routines.

For example, the New York Power Authority, a White Plains-based wholesaler of electricity, uses the devices to track maintenance on and around transmission lines. The power company's lines carry about a third of New York state's electricity, including the power that drives New York City's subways.

Field workers, page 62



16-BIT APPLICATIONS

Corel, Lotus struggle for hold in market

By Gordon Mah Ung

WHEN MICROSOFT CORP. abandoned crowds of 16-bit desktops in its push for Windows 95, Corel Corp. and Lotus Development Corp. stood to make a killing with new Windows 3.1 versions of their office productivity suites.

At least that's the way it was supposed to happen — according to Corel and Lotus. Analysts, however, who say Microsoft has failed to address the large population of corporate

Corel, page 66

FACT FILE

	1995	1996
Number of employees	200	430
Key vertical markets	Health care and financial services	Manufacturing and health care
Technology	Relational database based for transaction processing	Relational database that lets users store complex data

Database firms tout objects

By Craig Steedman

INFORMIX SOFTWARE, INC. may have made a big mess of its database business this year by pushing object technology too hard. But that isn't stopping other vendors from hopping on the object train.

Niche database companies InterSystems Corp. and Uni-data, Inc. are getting into objects in an effort to expand their markets. The two makers of specialized transaction processing databases are both releasing new products that tap object technology to give users the means to build more complex applications.

Complexity is the key word

for users who have chosen InterSystems or Uni-data over mainstream databases.

For example, Partners Health-Care System, Inc. runs its financial systems on standard relational software. But the Boston-based health-care provider relies on InterSystems' multidimensional database for more unwieldy clinical and administrative applications.

InterSystems "more easily models the real-world complexity" of applications such as surgical scheduling and ordering of medications or lab services, said Steve Flattmann, corporate director of application development at Partners. The ordering

Object-based, page 66

Field workers get wired on management system

CONTINUED FROM PAGE 61

"When we apply herbicides to a right-of-way, we need to keep track of how many gallons we use and then write a report at the end of the year to the various environmental agencies," said Tom Mc-

Dermott, director of performance engineering. "It's a pain in the neck having to keep track of all that paperwork."

But now line workers carry handheld devices and simply load the information

into the devices as they work. PSDI's Maximo software tracks and logs herbicide use, compares the information with preset maintenance plans and alerts a user if it discovers inconsistencies.

Steve Cloutier, an analyst at Automation Research Corp., in Dedham, Mass., said this type of product is of particular interest to companies that have geographically dispersed sites and need to closely coordinate maintenance work.

PSDI has released three applications, Maximo Procedure Builder, Maximo Rounds and Maximo Lockout/Tagout/Lineup (see chart, page 61), that can run on any Intel Corp.-based handheld devices, such as iCom Corp.'s PalmPilot. All three applications are used to manage maintenance requirements.

Cloutier said the one feature missing from PSDI's package is a cellular or radio frequency communications system so that the information gathered on the road can be quickly downloaded into the main system. Now, users have to return to the office, hook the handheld devices to their desktop and download the information.

Indus International already has the radio frequency capability built in to its package. Its applications include maintenance management software and the ability to send real-time emergency dispatches from a site.

Ed Bice, transmission line supervisor at the New York Power Authority, also would like workers to communicate from the field. "So far, all we have done is captured information in the field on the handhelds," Bice said.

PSDI's system costs \$500 per application per device. Procedure Builder and Rounds are currently available. The third application is due later this month.

Indus International officials said the pricing of their product varies by the license but said it is competitive with PSDI. □

"With NCD, their network's in a great state."



THE CALIFORNIA HOUSING FINANCE AGENCY IS THE FIRST STATE AGENCY OF ITS KIND IN THE NATION TO USE THIN CLIENTS. THEIR CHOICE IS NCD.

Two years ago, the Agency was left with a mini-computer network by a company that had gone out of business and dumb terminals that needed replacement. They also had tons of legacy software and productivity apps on the mini. The database was ported to UNIX, so the path was clear - they wanted an X Windows environment working on a server with mouse-driven software.

"With NCD's network computers, we're able to run legacy apps, provide Windows apps running on NT, and allow end users to get to any platform and any environment they need easily and with a familiar look and feel," says Don Miao, CIO for the Agency. "End users seem to love it."

"In the beginning, cost per desktop was about the same as a PC, but in the past two years we've spent exactly zero on upgrades at the desktop level. And support costs - no comparison." With nearly 200 thin client devices in place, they have one systems administrator and no dedicated help desk. The eleven people in Don's division simply field a low volume of calls as they come in. "That says something," added Miao.

What's next for this forward thinking State Agency? "With the help of NCD, we're delivering internet web browsing to every desktop. An agency-wide intranet will be in place soon after. End users can't wait."

NCD is a leader in thin client computing and has installed more than 400,000 devices worldwide. We're proud to provide solutions for customers such as the California State Housing Finance Agency.

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Get NCD's catalog of your selected environment today and let us show you how our thin clients can work for your enterprise. To submit your information, visit www.ncd.com/inform.html or call 1-800-555-4200 ext. 7004.

NEW

PRODUCTS

LINCOLN BEACH SOFTWARE has announced Download Butler, a Windows utility that collects and categorizes files as they are downloaded from the Internet.

According to officials at the Ballwin, Mo., company, the software captures downloads in a tabbed notebook. It then categorizes information such as file names, file descriptions and World Wide Web site uniform resource locators.

Download Butler works with any browser and includes a built-in decompression utility that allows users to open and extract any file in an archive to a specified location and start the installation.

Download Butler costs \$49. Lincoln Beach Software
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A recent International Data Corporation (IDC) study of organizations that have implemented data warehouses reveals an average three-year Return on Investment of 401%!

And you'll find there's no better choice for reaping similar rewards than the SAS Data Warehouse. Here's what two companies featured in the IDC study have to say:

LTV Steel Company ROI=16,995%

As the third largest steel operator in the U.S., they've been using SAS software for data warehousing since long before the term was coined. According to Senior Statistician Robert Schatz, "SAS software is THE element of our data warehousing solution. It beat everything else for data retrieval...and it would have cost us maybe a half million dollars to bring something else in for a data warehousing system."

Phillips Petroleum Company Norway ROI=151%

As a leader in the high-stakes oil and gas industry, Phillips Petroleum relies on its SAS Data Warehouse for an up-to-date picture of company health and safety trends. "With the help of data warehousing, we have an overview of all the 'criticality' factors involved in the daily operation of oil producing platforms," says Incident Analyst Pål Navestad. "In addition, historical data makes a great contribution to cost-efficient design and redesign of our facilities. This knowledge tells us which preventive measures are most effective for increasing revenue and profitability. Quite simply, our SAS Data Warehouse helps to reduce injuries and saves money."

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Novell.

Microsoft components

CONTINUED FROM PAGE 61

operating system through a Web browser. The applications themselves won't be able to run on non-Windows platforms, but they will have a dynamic Hypertext Markup Language-based interface that a browser can access.

USER PRESSURE

Microsoft is responding to market demand, said Karen Boucher, an analyst at The Standish Group International, Inc. in Dennis, Mass. "Microsoft is getting pressure from its customers to be cross-platform. The more pressure, the more chance they'll actually [go] cross-platform," she said.

David Lazzar, lead product manager for Microsoft's visual tools, acknowledged as much.

"It's reality. We're not going to move people to Windows NT databases overnight," he said. Meanwhile, Microsoft's move will make it possible for users of Internet-based applications to access data now on mainframes and Unix systems.

The components that will be tied more closely into Microsoft development tools include OLE DB, Active Data Objects and the Open Database Connectivity (ODBC) standard. Active Data Objects is a high-level programming interface that makes it easier to set up the access channels. ODBC is a lower-level connection technology that can access data on various databases. OLE DB does the same thing, but it also gives access to nonrelational data sources, such as object-oriented databases and mainframe flat files which previously were inaccessible through ODBC alone.

"Right now, each data source needs to be wrapped a different way," said Dave Lingren, director of advanced development at Datasurge, the information technology arm of Dun & Bradstreet Corp. in New York.

"OLE DB gives you a standard so everything has one way of asking for data from all the different sources. That's one of the most important things to me," he said. □

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A. Total number of copies printed and distributed:	200,194	180,182
B. Total paid circulation:		
1 Sales through dealers and carriers, street vendors and counter sales	None	None
2 Mail subscriptions sold and/or renewed	173,868	173,381
C. Total paid and/or requested circulation:	173,868	173,381
D. Paid circulation by mail, carrier or other means: samples, complimentary and other free copies	24,369	14,770
E. Free distribution outside the mail, carrier or other means: None		
F. Total distribution (sum of D and E)	24,369	14,770
G. Total distribution (sum of C and F)	198,255	188,191
H. Copies left over:		
1 Office use left over unaccounted, apart from printing	2,050	2,001
2 Held for future distribution	None	None
I. Total (sum of C, H, I - should equal net press run shown in A)	200,914	180,182
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I certify that the statements made by me above are correct and complete.

Pet Walker
Traffic Manager

Corel, Lotus try to keep hold in 16-bit market

CONTINUED FROM PAGE 61

desktops that still run 16-bit applications, say they aren't so sure Corel and Lotus have hit the bull's eye.

"You're talking about a class of folks who just doesn't buy anything. The whole point of them staying 16-bit is that they don't want to do anything. It's a fairly limited opportunity," said Rob Endler, a software analyst at Giga Information Group in San Jose, Calif.

According to PC Data, sales of office suites for Windows 3.1 have plummeted, while Windows 95 sales have taken off.

Both Corel, in Ottawa, and Lotus, in Cambridge, Mass., emphasize Internet connectivity and World Wide Web authoring tools in their new suites for the 16-bit Windows 3.1 crowd.

Corel released Corel WordPerfect Suite 7 for Windows 3.1 and a 16-bit edition for the legal community in August. It said it was responding to the large user base of Windows 3.1 users.

Steve Bush, manager of systems and networks at Harris Chemical Group in Overland Park, Kan., said he was glad

someone was still developing for Windows 3.1. "We're pretty excited about it. There's a lot more Web publishing features," he said.

Bush said his firm is upgrading about 6,000 Windows 3.1 seats from WordPerfect 6.1 to WordPerfect 7.0. Eventually, however, Bush said he figures the lack of software companies developing 16-bit applications will force Harris Chemical to move to a 32-bit version of Windows.

The 16-bit version of SmartSuite nearly mirrors the feature set of Lotus' 32-bit SmartSuite 97 application. For example, from within the WordPro word processing program, users can perform Web searches and can save documents as HyperText Markup Language files.

Still, the sales weren't there. Market research firm PC Data in Reston, Va., says sales of office suites for Windows 3.1 have plummeted, while Windows 95 sales have taken off. In the 16-bit world, Lotus sold about 43,000 copies of suite software in 1995, about 25,000 last year and just 5,000 copies so far this year.

Corel's sales of Windows 3.1 office suites were from about 37,000 last year to about 44,000 this year. That put Corel just behind Microsoft, which has sold 47,000 copies of its 3-year-old Office suite Version 4.3 this year. □

Object-based technology

CONTINUED FROM PAGE 61

system would need to fetch information from 750 different database tables with relational software, he said. "Performance-wise, that just wouldn't work," Flammmin said.

Partners, which runs two major hospitals and a network of 800 doctors, already wrote its own software for converting InterSystems data into reusable objects and components that can streamline development and support more complexity.

"But I'd much rather that they develop the tools for me," Flammmin said. A pilot application using InterSystems' new object extensions is planned for next year.

PRODUCT RELEASES

InterSystems, in Cambridge, Mass., last week released an object-enabled upgrade of its OpenM database and renamed it Cache. The product supports Java, ActiveX and C++ and also includes a SQL interface for getting at information stored in relational databases. Per-user pricing ranges from \$125 to \$1,000.

Denver-based Unidata this week plans to introduce a stand-alone object data-

base that it obtained via an acquisition. Os Version 5.0 can be hooked to the company's relational database, which lets users "pert" multiple pieces of data in tables to cut down on joins. Shipments are due late this month, with development licenses starting at \$4,000.

Vertical Technologies, Inc., in Calgary, Alberta, develops plans to use Os to store legal documents and written notes that could be linked to its Unidata-based accounting application for lawyers. That would let users "tie together all the legal components of a case with all the back-office information," said David Hanowski, vice president of research and development at the company.

For WCA Healthcare System, Inc., an InterSystems user in Jamestown, N.Y., the object features of Cache hopefully will help make it easier and faster for doctors and administrators to update medical records and other patient data.

"Our application is massive, and I don't think patients want a computer to hold things up," said Sandra Swanson, director of information systems at WCA. □



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Servers & PCs

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Briefs

HP and Intel sign

Motorola Co. plans to support Intel Corp.'s Wind for Management specification in its line of Vectra PCs. The specification will give users standard instrumentation, remote boot ROM and PC card update features.

Officials at the Palo Alto, Calif., company say that mid-HI will integrate Wind for Management features with its conventional configurations. Both PCs and workstations will be ready to plug in to HP's OpenView network management software.

StarfishLink movie deal

Universal City, the Los Angeles media studio controlled by Disney-Movie Splendor, recently bought Storage Technology Corp.'s MediaVault tape library to store digital animation from its feature film.

StorageNet, in Louisville, Colo., developed MediaVault specifically for the broadcasting industry. The company leads the high-end tape storage market.

Dell partners with

Dell Computer Corp. in Round Rock, Texas, has announced a partnership with two Inspiron notebook models that use V46- and 200-MHz Intel Pentium processors with MMX technology.

The Inspiron 1000 and 1000T feature 160 bytes of RAM, a 2.5-G-byte hard drive and Microsoft Corp.'s Office 97 suite. Pricing for that model starts at \$1,499. Both models come with a 14.1-in. monitor.

Explore this client

Network Computing Devices, Inc. has announced a family of thin-client desktop devices that are aimed at the character-based terminal replacement market.

The Explore 400 Series is based on the 33- and 46-MHz PowerPC processor and can be used to access Windows, Unix, legacy and Java applications. Pricing starts at \$2,200.

Timing is key to IT discounts

By Jayakumar Vijayan

CALL IT A MATTER of timing, but when you make your information technology purchases it is becoming almost as important as what you buy.

And that rule applies to more than just hardware acquisitions.

Savvy corporations that want to shave dollars off their procurement budgets or negotiate better terms on their purchases are waiting for fiscal year endings and quarter endings to drive good deals from

their hardware, software and service vendors.

That may include getting price reductions of 10% or more on hardware and software purchases, more bundled features, steep discounts on future purchases and better licensing and maintenance terms.

LAST-MINUTE DEALS

Most vendors are trying to clinch as many deals as possible during the closing weeks of a financial cycle to meet preset sales targets.

Some experts figure that

many companies make as much as 25% of their annual sales in the last month of their fiscal year. As a result, they are more open to negotiations during this period than at any other time of year,

observers said.

The best times to drive such bargains are at the end of a fiscal year, at the end of a quarter and at the end of a month, said Joe Auer, president of International Computer Negotiating, Inc., a consultancy in Winter Park, Fla.

"Somebody is always putting pressure on the sales force to get more bookings into this sales period. Many times, what [a salesperson] earns is absolutely tied to that year's performance. Enlightened users will take advantage of this situation," Auer said.

His advice to corporations: Make sure you know your vendor's fiscal year end, prepare negotiating objectives in advance and be ready to do business in the closing weeks

Timing, page 72

Tiny PDA steps up to challenge PalmPilot

REX PC COMPANION

Weight: 1.4 ounces

Capabilities: Download names, phone numbers, to-do lists and calendar from a PC

Features: Personal information manager and Starfish Software's TrueSync software

Price: \$129.95 for Rex-1 (stores up to 750 items); \$149.95 for Rex-3 (stores up to 2,500 items); \$39.95 for docking station

By Kim Girard

3Com Corp.'s popular PC companion PalmPilot now has a little competitor named Rex.

Rey from Franklin Electronic Publishers in Burlington, N.J., introduces a handheld device to the personal digital assistant (PDA) market. It weighs just 1.4 ounces and is about the size of a credit card. It is much smaller than the 6-ounce PalmPilot.

Users said they are impressed by the convenience of the tiny Rex but said they wonder whether it is as useful as PalmPilot.

"If I can't modify my schedule or add a phone number or a to-do list item, it really detracts from the functionality of the device," said Tom Tracey, a systems officer at PNC Bank Corp. in Pittsburgh. "Interactivity is a

requirement as far as I'm concerned."

But Joe Custer, a sales direc-

tor at Chromatic Research, a multimedia product company in Sunnyvale, Calif., said he would consider dumping his PalmPilot for a Rex.

Custer said he has broken the screen on the front of his PalmPilot several times, but said he likes the idea of a smaller device with an LCD display.

"I could put that in my wallet," Custer said.

Rey users can download data from a PC by sliding the device into a PCMCIA slot or by attaching a docking station to a serial port on the device

PDA, page 72

Compaq rolls out made-to-order PCs

Compaq Computer Corp. this week will roll out machines based on a new made-to-order manufacturing process.

Officials at the Houston-based company last week told Compaq will start with its corporate Desktop line, which has three models — from low-end to high-end machines.

In anticipation of its product launch, the company also reduced by about 15% the prices of its older Desktop models.

Analyse said the move toward

the build-to-order process will help Compaq compete with rival Dell Computer Corp. in Round Rock, Texas.

Dell has enjoyed a 15% price margin advantage over indirect vendors such as Compaq. Under Compaq's indirect sales model, the company had to forecast inventory requirements as much as a year in advance to keep resellers' channels stocked with machines.

With a build-to-order system,

Compaq will be able to cut costs by holding inventory for less time. The company also plans to offer more flexible desktop configurations.

New models available this week include the Desktop 2000, 4000 and 6000. They all feature Intel Corp.'s Pentium II processors, ranging from 233 MHz to 300 MHz. And they come pre-loaded with Microsoft Corp.'s Windows NT Workstation 4.0. Prices range from \$1,739 to \$3,499. □

— April Jacobs

Tiny PDA stands up to PalmPilot

CONTINUED FROM PAGE T1

Andrew Seybold, a mobile computing analyst and editor of "Andrew Seybold's Outlook" newsletter in Boulder Creek, Calif., said PalmPilot users who don't use Graffiti — the PalmPilot's handwriting recognition system — or who don't need to change appointments or addresses on the fly, may prefer the pared-down functionality of the Rex.

Rex users can download data from a PC by sliding the device into a PCMCIA slot or by attaching a docking station to a serial port on the device

"It does what I want it to do without the bulk of the Pilot," said Seybold, referring to the address book function.

Rex, which is shipping now, comes in two models: Rex-1, which stores up to 750 items such as addresses or appointments, costs \$149.95. Rex-3, which stores 3,500 items, costs \$149.95. The docking station costs \$39.95. □

IBM to use copper in all microprocessors

By Joanne Taaffe

WITHIN THE NEXT FIVE years, IBM will build all its microprocessors using a new manufacturing process that depends on copper instead of aluminum to bond transistors, said Michael Attardo, general manager of IBM's microelectronics division.

Attardo spoke last week in Paris at the opening of a production line for 64-Mbit dynamic random access memory (DRAM) chips.

NEW TECHNOLOGY

IBM's manufacturing technology is called CMOS 75. CMOS stands for complementary metal oxide semiconductor.

By using copper in its manufacturing process, IBM can make smaller, faster chips and eventually cut the cost of chip manufacturing by 15% to 20%.

— Michael Attardo, IBM

CMOS 75 lets IBM draw on copper's ability to conduct electricity better than aluminum — the metal normally used in chip construction — while

insulating copper wires to prevent its tendency to fuse with silicon.

This process means IBM can make smaller, faster chips and, according to Attardo, eventually cut the cost of chip manufacturing by 15% to 20%.

The company plans to phase out aluminum and use copper in all of its chips by 2002 or 2003, Attardo said.

CMOS 75 chips will move into mass production next year, and IBM initially will concentrate on using copper to make microprocessors and static RAM.

The first IBM systems to use the new chips will be IBM's mainframes and high-end servers, such as next year's AS/400 and RS/6000 machines,

Attardo said.

Attardo said he would like to see a rise in the number of chips sold for consumer communications products. That area currently accounts for 10% to 15% of IBM's chip sales.

Attardo said he wants that to grow to 30% to 40% in coming years.

IBM's Coeur d'Alene semiconductor plant outside Paris has 1,600 employees and about 400,000 square meters of building space and is the biggest semiconductor plant in Europe, according to officials at IBM. □

Zafiq writes for the IDG News Service in Paris.

Apple pulls PowerPCs

By IDG News Service staff

APPLE COMPUTER, INC. is taking back its high-end PowerPC desktop system off dealer price lists because of a shortage of 604E microprocessors, a spokeswoman Diane Hayward said. The move affects 6000 models that use 350-MHz processors.

The Cupertino, Calif.-based company will continue to fill the orders that have been taken but will stop taking orders, possibly indefinitely, according to Apple spokeswoman Diane Hayward.

"We're still producing the systems as they get the chips to us," Hayward said. "We decided

to stop taking orders rather than having customers wait and have that delta continue to grow. They may go back on the price list and may not."

Hayward said she couldn't say how many systems are on back-order or discuss how many 604E processors Apple is receiving.

Officials at IBM, which makes the microprocessors, couldn't be reached for comment.

Meanwhile, Apple is recommending a replacement for customers who want to order the systems — the 6000 models that use 300-MHz processors. Hayward said. □

S H O R T S

Intel acquisition

Intel Corp. last week acquired privately held Corallay, Inc. in Irvine, Calif., a developer of multiprocessor server technology. Financial terms of the deal weren't disclosed. Intel officials said it is aimed at accelerating the production of eight-way servers based on Intel's Pentium Pro processors. Corallay will retain its name and identity. The company will become a wholly owned subsidiary of Intel.

Iomega files suit

Iomega Corp. filed suit against Nomad SA, a French maker of digital storage products. The lawsuit alleges unfair competition and patent infringement related to a storage diskette launched by the French company earlier this month. The complaint, filed recently in the District Court in Paris, concerns Nomad's HHD 100M-byte SuperFloppy diskette. The suit is the latest overture in an ongoing legal struggle between the two companies. Nomad, which couldn't be reached for comment, is marketing the diskette as being fully compatible with Iomega's Zip drive. Iomega disputes the manufacturer's claim.

Motorola chips

Motorola, Inc. last week said it has developed a technique that replaces aluminum wiring with copper interconnects in integrated circuits. That will result in smaller, faster chips for devices such as handheld computers. The process takes advantage of copper's property of conducting electricity better than aluminum and copper's greater resistance to electromigration, Motorola officials said. The copper interconnect technology can support 50 million to 100 million devices on a chip, officials from the company said. IBM recently said it will also use copper to make faster processors (see story above).

Nielsen tracking

Nielsen Media Research, widely known as the company that tracks TV ratings, said it is recruiting home PC users and testing software that will track consumer Internet and PC use. New York-based Nielsen has signed several hundred home PC users and hopes to increase its sample size to about 10,000 by early next year. Nielsen hasn't set a date to launch the ratings service, which would compete with several other services that measure World Wide Web audiences.

Timing is key to IT discounts

CONTINUED FROM PAGE T1

of a cycle.

"Whenever we took advantage of it, we found that the vendor was willing to go the extra mile. They wanted to give you the extra discount and the extra freebie because they were nervous and they wanted to make their quotes," said Terri Nass, a senior contract specialist at the Washington Suburban Sanitary Commission in Laurel, Md.

There are times when the commission hasn't ready to make purchases toward the end of a quarter, Nass conceded. "But 90% of the time, we found that we could get a similar deal

at the end of the next cycle," she said.

Users such as Nass said there is more negotiating room with software purchases.

But users can get good deals on hardware, too.

"We found that we got a few extra bells and whistles when dealing with a vendor at the end of a year. There was a tendency on their part to negotiate," said Ray Mark, a sourcing specialist at Mobil Corp. in Fairfax, Va.

He was referring to his experience in dealing with hardware vendors in his previous job at a manufacturing firm.

It also helps to have multiple hardware vendors that are competing against one another for a hardware contract, Nass said.

That tends to open up vendors to negotiations even more during the end of a sales cycle, she said.

Another user, who is director of production control at a financial institution in Virginia, said user companies can save 30% on hardware purchases.

"Many times you can get this sort of deal by knowing exactly when to ask for them from a vendor," said the information systems manager, who requested anonymity. □

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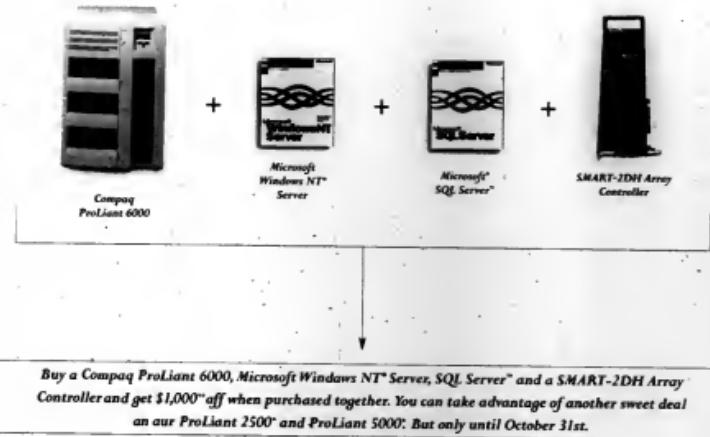
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NEW PRODUCTS

MICRO DESIGN INTERNATIONAL, INC. has announced the CD-Express Connect, a LAN-attachable CD tower with seven 12-speed CD-ROM drives.

According to the Winter Park, Fla., company, the tower offers CD-ROM access over 10Base-T Ethernet or Token Ring connections. It has a 32-bit RISC processor and 32M bytes of cache mem-

ory. It supports many clients, including Windows, Unix and OS/2, along with World Wide Web and intranet clients.

Pricing starts at \$1,995.
Micro Design International
 (407) 677-8333
www.mdi.com

SEAGATE TECHNOLOGY, INC. has announced

a line of Barracuda disk drives.

The Scotts Valley, Calif., firm said the 3.5-in. desktop drives come in three capacities: 1.8G bytes, 9.1G bytes and 4.5G bytes. Interface options include Ultra SCSI, Ultra SCSI and Fibre Channel.

The 1.8G-byte drive costs \$1,745, the 9.1G-byte drive costs \$1,080, and the 4.5G-byte drive costs \$690.

Seagate Technology
 (408) 438-6550
www.seagate.com

IMPERIAL TECHNOLOGY, INC. has announced the MegaCache 4000, a tabletop or rack-mount caching system for improved I/O of storage units.

According to the El Segundo, Calif., company, the system's two 100M byte/sec. internal buses make data stored on disks available to the host in 0.1 msec. or 1/100 the time taken by conventional disks. Users can connect host computers and SCSI disk drives or RAID arrays to up to 12 Ultra SCSI ports on the MegaCache 4000. Cache capacity ranges from 265M bytes to 8G bytes.

Pricing starts at \$35,000.
Imperial Technology
 (800) 451-0666
www.imperialtech.com

LANART CORP. has announced the LANart 10/100 Fiber NIC, an Ethernet/Fast Ethernet adapter for fiber network connections at the desktop.

According to the Needham, Mass., company, the network interface card (NIC) can access data through two fiber connections. If one connection fails, the adapter card automatically moves to the second connection. LANart 10/100 was designed for migrating to Fast Ethernet, while keeping the old Ethernet infrastructure as a redundant network.

The product costs \$549.
LANart
 (617) 444-1994
www.lanart.com

CHEM USA CORP. has announced ChemBook 7900, a multimedia notebook with a 16-bit stereo sound card, a 64-bit graphics engine, two stereo speakers and a built-in microphone.

According to the Newark, Calif., company, the notebook has a 14.3-in. screen, one of the largest displays available. The base model has a 120-MHz Pentium processor, 16M bytes of RAM, a 1.4G-byte hard drive and a 20-speed CD-ROM drive. Users can upgrade to 233-MHz processors, 32M bytes of RAM and 3.5G-byte hard drives.

Pricing starts at \$3,300.
Chem USA
 (901) 568-8818
www.chemusa.com

AXIS COMPUTER, INC. has announced the Ultima II, a SPARC-based workstation with dual processors.

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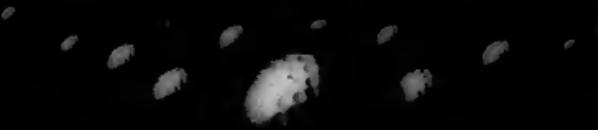
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Blooming careers

1-800-FLOWERS takes a diverse approach to IT training to help make success sweet. Page 86

Managing

It's a big IT project, and your business unit wants it done in two months. You nod, but privately you wince. You'll need twice as long to get the job done right. It's moments like this when you have to know how to be a ...

Captain of CRUNCH

BY ROCHELLE GARNER

Spill is the rich, tough project manager at level executive Ron Carnana, IT director at GTE Telecommunications Inc. in Tampa, Fla., can't seem to stay out of trouble.

Here's an interesting tidbit: The word "deadline" originally referred to a line drawn around a military prison, beyond which prisoners were summarily shot. By the way, how is that crunch project coming?

If you're like most people who oversee information systems projects, deadlines today can seem almost as threatening as those early lines drawn in the dust. Granted, you won't be dodging lead. But when a project's bullets are forged from internal politics, unreasonable expectations and unforeseen slippage, those crunch schedules — when you're leading projects in which you're given less time than you'd like to get them done right — can become dangerous to your career.

But the situation doesn't have to be hopeless. The trick, say those who've lived through deadline hell, lies in knowing what and how to negotiate with the corporate chiefs who started the project.

"You don't have to sign up for a death march," says Ron Carnana, director of information technology at GTE Telecommunication Services, Inc. in Tampa, Fla. "You do have to identify the alternatives and the contingencies for things you

Captain of crunch, page 82

Captain of CRUNCH

CONTINUED FROM PAGE 31

know are risky, and you have to let the top-level executives know what those risks are."

YOU WANT IT WHEN?

The first risk to negotiate: the deadline itself. Sure, tight schedules often are dictated by legal, regulatory and market factors. They can't be pushed back. But some deadlines seem almost arbitrary — as if an executive chose a date simply by throwing a dart at a calendar. Those not only can be negotiated, they must be.

Yes, that takes courage. No, it's not a mark of personal failure — if you show executives early in the process how impossible your deadline is. "Crunches normally happen when executives dictate the final date for a project, rather than ask when it can be done," says Doug DeCarlo, project management consultant and coach at ICS Group, a project management consulting firm in Norwalk, Conn.

"We advise our clients who can use project management software to schedule the project backward from the finish date — identifying the phases, milestones and tasks — and let the software schedule the project with reasonable estimates," DeCarlo says. Such software includes ABB Corp.'s ABT Workbench and Primavera Systems, Inc.'s Primavera Project Planner. "If the software shows the project would have had to start sooner than it was even assigned, the leader has a pretty convincing presentation in the form of that illustrated printout."

When you make that presentation, it behoves you to suggest alternatives. Say the deadline can't be moved. Hiring temporary help, at a cost of thousands of dollars, could make the date. Not an option? Then consider a phased approach — breaking the project into chunks and delivering, on schedule, only those phases the business must have first.

"Requirements management is critical to success," Caruana says. "There's a tendency for people to want everything now. But if chunking a project satisfies market requirements, it's a no-brainer for managing the crunch times."

Remember that suggestion. It's perhaps the best way to compress time throughout most of a project's implementation cycle. The key, though, is making sure that the business side decides how the project can be divided. IS's responsibility lies in knowing the company's business well enough to suggest chunks that jibe with customer or market requirements.

Just be aware that this takes political skill. "Parsing a project requires real political savvy because, if you chunk a proj-

ect into four pieces, the person with a stake in the fourth chunk usually goes ballistic," says Gopal K. Kapur, president of the Center for Project Management in San Ramon, Calif. "That fourth-chunk person wants to know why his part of the project has to come last. That's why we involve politically savvy IT people and businesspeople to do the chunking."

And speaking of office politics: just how are you supposed to deal with the inevitable delays caused by political buckering, turf wars and team members over whom you have no direct control?

The answer lies in the management process you've so painstakingly laid out and documented. No, that isn't the critical path method or Pert plan that detail which tasks must be done and when. Such plans — although vital for overseeing complex projects — don't define the personal interactions, authority and communication intended to remove the ugly obstacles that invariably rear up from internal politics. For that, you also need a well-defined process that's been agreed upon by the upper echelons.

PROCESS, PROCESS, PROCESS

"This is so basic [that it] is almost embarrassing to articulate," Caruana says. "The very first thing a project manager has to do is make sure people understand the project management process their company embraces: how work is introduced, how it is planned, how contentious issues are resolved and how the cross-functional project managers work with the functional managers to deliver."

That's right, more up-front work. But without it, a project

manager has no real authority to deal with anyone.

That's because the management process also defines the manager's authority — even over staffers who report to a different functional manager.

And what happens when conflicts arise among managers too high for you to command?

Just turn to the well-documented process to see which high-level executive has

so far applies to any project, regardless of size. Where things differ, though, is when projects have the prefix "mega" tacked onto them.

"Compressing time is different for large projects than for medium and small projects," says David H. Starr, chief information officer at The Reader's Digest Association, Inc., in Pleasantville, N.Y. Starr's list of megaprojects includes a monster: Citicorp's Integrated Systems Project, which tied together 43 systems with 2 million lines of executable code.

"If you use what's laid out for medium projects, everything will collapse under its own administrative weight," Starr says. Our recommendation: Don't try to do everything yourself. Instead, assign high-level staffers to oversee project administration, for example, and data conversion.

And yes, everything has to occur at practically the same time.

"You simply have to have more concurrency of tasks, maybe defining one piece while you're developing another," Starr says. "The other secret is to break up big projects into little projects, especially if you can set them up as a bit of a competition."

ONE AGAINST THE OTHER

That's right, competition — but not staff against staff so much as consultants against vendors. "I love putting consultants and vendors against each other and letting each one watch what the other is doing," that way you can say, "This is what the other guy is going to produce. Can you beat it?" It raises the denominator for the whole project."

Clearly, Starr is an experienced project manager who can mesh business acumen with project oversight. But what happens when someone with only technical expertise must oversee a project? "Taking a perfectly good technical person out of their element and making them in charge of a project has produced the worse outcomes I've ever seen," Wolseth says. "The only help is to get them a mentor."

Kapur adds, "When business projects are put under the control of IT people, they are headed for failure. It's an untenable position to be in."

So what should you do if you find yourself in such an untenable position?

Beg for a memo or a consultant, if you can. Ask to be taken off as lead project manager, if that fails.

Because if you don't understand project management and lack the political clout to get things done, you could very well end up crossing that imaginary line in the dust.

Room. □

Garner is a freelance writer in San Carlos, Calif.



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**Everything's coming up - well, you know what - at 1-800-
FLOWERS' interactive division. But it takes a diverse
approach to IT training to make everything bloom just right**

By Alice LaPlante

WHEN LISA GARAFOLI graduated from college last year with a computer science degree, she was delighted to land a job in the hottest information technology career track: electronic commerce.

But as operations coordinator in the interactive division at the world's largest florist, 1-800-FLOWERS, Garafolo found herself doing things she never would have anticipated: answering telephones, assembling gift baskets and giving customers advice on what kinds of flowers to send on Mother's Day.

"I'd expected to be more of a traditional systems analyst. But I love this job," she says.

Does Garafolo, who has invested years preparing for a technical career, resent what might be viewed as a lack of focus?

"Not at all. I've just learned that the technology by itself isn't important. It's how you apply it that counts," she says. "This is how I plan to build my career."

HELP WANTED

REMANUFACTURE MEN AND WOMEN

The firm's multitrack training program, called "Florawessity," was designed to make employees experts in many areas.

The premise behind Florawessity is that even though an employee has a primary job responsibility within a certain function, he will be called upon to exercise knowledge of the floral industry and 1-800-FLOWERS in particular, says Neil Halloran, director of corporate training.

And IT workers such as Garafolo who have gone through Florawessity will find themselves increasingly valuable at a company where customer and business needs come first and drive IT initiatives.

So, rather than resenting the time spent in horticulture classes, Garafolo and her colleagues are much more likely to find that the knowledge will be key to career success, says David Foote, author of a Meta Group, Inc. report on IT careers and managing partner at Cromwell Partners LLC, a Stamford, Conn., IT staffing consulting firm.

Garafolo is responsible for the content of the firm's sites on the World Wide Web, America Online and The Microsoft Network. She makes sure that product information and all editorial, reference and graphic materials are accurate, up-to-date and interesting enough to keep customers coming back. She works with interactive division teammates to make sure online orders are processed swiftly and accurately; customers' problems and inquiries are answered immediately and that all other parts of the electronic sales cycle run smoothly.

Garafolo spent her first weeks on the job learning every aspect of the floral business: arranging bouquets at a retail store, taking customer orders and tracking fulfillment of those orders via 1-800-FLOWERS' global distribution network. She completed training that immersed her in everything from HyperText Markup Language and Rainman, AOL's proprietary programming language, to how to care for exotic flowers. And on hol-

days, just like everyone else at 1-800-FLOWERS, Garafolo stops what she's doing and answers the phones.

These varied skills have turned out to be critical. That's why Donna Iacolano, director of the Interactive Services Division, rates 1-800-FLOWERS' cross-functional training program as high.

Iacolano oversees a staff of 15 full-time employees. Most, like Garafolo, hold traditional computer science degrees. There are also workers who have earned MBAs, as well as marketing professionals and employees promoted from one of the telemarketers or other operational areas.

Regardless of their area of expertise, all employees need to be cross-trained in every aspect of 1-800-FLOWERS' business, Iacolano says.

"Interactive activities cut across all

functions," she says. "The only way to succeed is if my employees understand the whole business cycle."

Indeed, technology-savvy repeat customers such as Lans Manufacturing say that attitude makes all the difference.

Mountford, an analyst at Stanford University's IT department, lives in a remote Pacific coast town and has little time to go to stores. So she goes online. Mountford estimates she racked up Web purchases of between \$12,000 and \$16,000 last year. She gives 1-800-FLOWERS high marks, mostly because the technology is so skillfully integrated into an understanding of what the customer wants.

"They include quality photographs and detailed descriptions of products. There's also a terrific variety of choices," she says. Mountford also is impressed by the technical standards. "The graphics load very quickly [and] the links are always functional," she says. Perhaps most important, there's a personal touch to the site design that could have come only from intimate knowledge of the business, she says.

"You get the same feeling logging on to their online store as you would get calling them on the phone or walking into a retail florist," Mountford says.

Too many retailers put up Web pages designed by technical specialists "who don't know anything about marketing or about the kinds of customers who will be visiting the site," says Matthew Kinsman, an analyst at Covell/Sunrise Information Services in Stamford, Conn. "1-800-FLOWERS has a well-thought-out online strategy that recognizes the personal touch is critical, especially to get the repeat customers." □

Facts on 1-800-FLOWERS

BASE: Westbury, N.Y.

WHAT: The world's largest florist with 130 company-owned retail stores and 2,600 "partner" florists. Online stores are at America Online (keyword: flowers), The Microsoft Network (in The Plant) and the Web (www.1800flowers.com).

FINANCIALS: This year's revenue is projected to be \$600 million; online revenues will account for 10% of that. Last year, there were about 9 million purchases of flowers at all channels.

INTERACTIVE SERVICES DIVISION: Established in 1993 to pursue nonretail opportunities using emerging technologies, the division employs 15 workers who have a mix of technical, operational, marketing and horticultural skills.

ONLINE AWARDS: Gold Site (WebGuide); top Cyberstore, five out of five stars (PC Computing); A "Must-See Site," four out of four stars (ZNet); three out of four stars (Magellan).

Alice LaPlante is a freelance writer in Woodside, Calif. She can be reached at alplante@aol.com.

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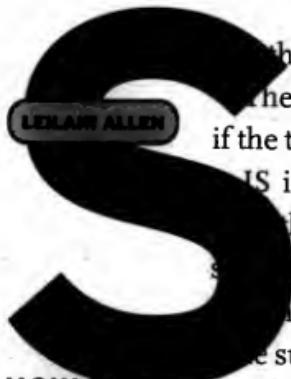
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chief!

The cry evokes the image of a stranger. But what if the thief is a valuable employee?

IS is no more susceptible to harboring bad apples than any other department. But our widespread access to all parts of the company, plus the fact that our staff frequently works off-hours without supervision, perhaps increases temptation.

What does a manager do when theft is hometown?

Company A, a small software services firm, wanted to keep "administrivia" to a minimum, so it kept a room stocked with supplies. Stuffers could walk in and take what they needed. Besides paper clips, tape and other standard supplies, toner cartridges, power strips, mice and other devices were kept in stock.

Over the months, supply costs began to increase significantly. Management concluded that things were being stolen and issued a memo that stated one or more individuals were stealing from the company and that strong actions would be taken. The supply room was locked, and employees had to ask the president's secretary for a key whenever they wanted access. There was no access after hours and on weekends.

About three weeks later, the staff discovered that someone had cleaned out more than a dozen offices over the weekend. Some equipment was stolen, but mostly people lost personal stereos, CDs, clocks and similar items. Because there was no evidence of a break-in, the police concluded it was employee theft. New locks were installed on the outside doors, but otherwise, no further action was taken.

The thefts didn't continue, and the culprit was never caught. No one knows if the timing of the theft was a coincidence or if it was motivated by the new policy.

Another situation took place several years back, before the advent of laptops. Company

B, a hardware firm, had employees in several offices across town. Like many such firms, it had a room set up for customer demonstrations and training, and many employees routinely carried equipment back and forth among the various buildings. Equipment began disappearing from the demonstration room: first a printer, then a

large-scale display unit, a PC and a projector device. The firm alerted its managers to the situation, but no one could offer any explanation.

Finally, a special camera installed in the demonstration room caught one of the senior engineers blithely removing a PC. The individual was summarily dismissed, and word was passed that the culprit had been found. No formal announcement was made to the employees, but they soon realized one of their colleagues was gone.

The fired engineer was very upset and asked to speak to his manager. He admitted taking the equipment but said that it wasn't stealing. He said it was more of a loan, just part of a research effort he was conducting at his own time. And after all, the equipment in the demonstration room didn't really belong to anyone. He also said the firm made most of the equipment itself or got it at a steep discount from suppliers, so the cost was minimal.

The manager knew the engineer was the ultimate bit-head. Perhaps, the manager thought, he was telling the truth. And if he didn't intend to keep the equipment, was it really theft? Moreover, the engineer was an extremely valuable resource, critical to the development of a new application. The manager concluded that the whole thing was a misunderstanding and went to the CEO to ask for a reinstatement. The CEO reluctantly agreed. Two weeks later, the employee and the equipment were back on the job. No announcement was made to the staff.

The staff reacted in various ways. Some believed that management had essentially sanctioned criminal behavior. They expressed discomfort at working with the individual. Some believed that management had done the right thing in giving a talented individual a second chance. Most just ignored the situation.

LESSONS LEARNED

Most large companies have clear-cut policies on employee theft, with infractions drawing significant penalties. Smaller

companies tend to rely on their collegial atmosphere as a guarantee against such behavior. But the atmosphere of trust can easily be shattered.

Company A's management may have overreacted when it basically accused everyone in the company of being a potential thief. We'll never know if the resulting month-long heist was a coincidence or the result of an employee deciding to "teach the firm a lesson." It would have been better if management sent out a memo that stated the problem of supply costs and asked employees to take only what they needed, rather than instituting a key control procedure. Management also could have asked for suggestions on how to monitor the situation.

Company B may not have had a true thief on its hands, but the way it handled the situation was extremely bad for morale. Employees, lacking any real information, could only conclude that either one of their colleagues had been accused and dismissed unfairly or that the company tolerated thieves if they were important enough. A better approach would have been to issue a short memo stating what had happened and that management was satisfied it was a misunderstanding, and reiterating the company's rules on equipment usage.

Every firm, no matter how small, needs a clear policy that outlines when equipment or other valuables can be removed from the office, and that a violation of the policy is considered theft and cause for immediate dismissal. It then needs to enforce that policy across the board. Even if the money involved is minimal, employees have to believe that their workplace is secure and that appropriate controls are in place to timely identify potential wrongdoers.

Wanted: Smart managers

What management techniques do you use that you consider particularly effective? Send a brief synopsis, and we'll work with you to develop a case study for publication. Topics include interviewing candidates, hiring and firing, commanding, handling conflict, planning, delegating, controlling and reporting—the whole gamut of management issues. E-mail Leland Allen at leland.allen@tiscali.com (no vendors or consultants, please).

Allen's column deals with people issues managers face every day but are reluctant to discuss openly. Each is based on a real-life situation. The names and certain circumstances have been changed to protect confidentiality. Allen is a director at Tiscali, a management consulting firm in Burlington, Mass.

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Buyer's Guide

GIGAWAIT for GIGABIT

By Kevin Burden

Good luck

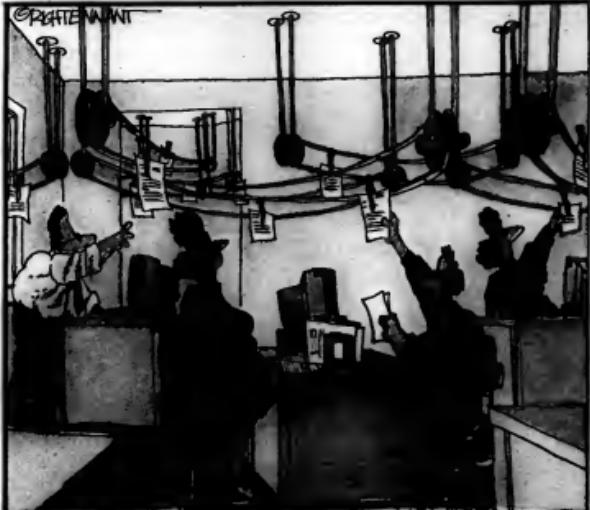
making decisions now for your network's future. Think of it — internetworking vendors are promoting the promise of and decrying the weakness of technologies such as Gigabit Ethernet and Layer 3 switching. As one industry analyst put it, "The FUD is flying thick right now."

Whether you should be interested in Gigabit Ethernet isn't much of a decision — you probably already are, especially if you're among those who have run 10Base-T Ethernet or Fast Ethernet to servers and desktops. Your network's backbone is screaming for more bandwidth to handle these volumes, and Gigabit Ethernet promises to deliver it with a smooth, cost-effective upgrade path.

You're also interested in Layer 3 switching, which gives switches the router intelligence to read IP addresses deeply buried in data packets. That address determines a packet's ultimate destination and is what enables routers to look past the destination address in the packet header and send packets around trouble spots so that they don't end up in virtual black holes. It's also the technology you give up in exchange for the high performance and lower cost of Layer 2 switches.

Luckily, these technologies are part of your network's very near future, but they are still just out of reach. Now isn't the time to make firm decisions, analysts say. Rather, it's time to wait for standards to finalize and watch the industry consolidate. In the meantime, you can get your ex-

Gigawait for gigabit, page 94



"Don't worry, Gigabit Ethernet will be here soon."



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GIGAWAIT for GIGABIT

CONTINUED FROM PAGE 91

expectations for these technologies under wraps, ready network segments with required infrastructure and learn everything possible about vendor offerings.

Gigabit Ethernet currently is going through a standards ratification process, which analysts say they expect to be completed in the second quarter of next year. Until then, several switches close to standard are available from several small vendors. And although those vendors promise the switches will be easily upgraded to the Institute of Electrical and Electronic Engineers, Inc.'s final standards, analysts warn of several aspects to consider if you're thinking about investing early.

RISKY BUSINESS

First, considering Gigabit Ethernet will most likely be used on network backbones, there are several risks to exposing a network's heart to unfamiliar vendors. "You can definitely bet on the wrong horse," says Dwayne Shuraku, a senior analyst at Delt'Oro Group in Portola Valley, Calif. That means to be wary of small vendors that aren't establishing relationships with strategic vendors such as jCom Corp., Bay Networks, Inc., Cambetron Systems, Inc. or Cisco Systems, Inc. "You want your internetworking vendors to provide support, maintenance as well as the next generation of features. Start-ups won't be able to compete with the majors once they get rolling," Shuraku says.

Many start-ups already have "double-secret relationships with major vendors," says Melinda LeBaron, a research director at Gartner Group, Inc. in Stamford, Conn. "OEM relationships are their lifelines, and we'll soon start seeing major vendors coming out with renamed products without much of an explanation of where the products came from."

This is true for Gigabit Ethernet and Layer 3 switching products. If you buy in early with secondary vendors, whether it's for testing or because you need immediate bandwidth relief, learning what relationships the vendor has should be a top priority. LeBaron says "Users should also make sure of the products' interoperability. So if they later decide to go with another vendor's switch, they'll be able to connect boxes," she says.

Secret relationships, along with the market consolidation that has already begun, make it difficult to know what vendor you'll ultimately be doing business with. Steve Lucas, a network manager for the City of Columbus, Ohio, says fear of the unknown is why he is waiting for Cisco — his primary vendor — to release its products. "I have to dance with the girl that brought me," Lucas says. "Be-

sides, homogeneous connections are critical to the performance of our backbone. To me, it's worth waiting for the standards."

Analysts say they expect the unwilling to hold off large user investments until next year. The exception will be users who find products that meet specific requirements. Those users may look at smaller companies such as Excelent Design, Inc. in San Diego. "It tightly focuses on migrating users with [Fiber Distributed Data Interface] backbones to Gigabit Ethernet. It's exactly the type of investment that makes sense for users [with this specific requirement] to look at now, as opposed to waiting for products based on standards to evolve," says Paul Zagozski, a senior analyst at Giga Information Group in Cambridge, Mass.

Users also should fully examine what

to a Fast or switched Fast Ethernet. Gigabit Ethernet promises to protect that investment by delivering more of the same. Under Gigabit Ethernet, there will be no retiming of the network infrastructure or retraining network administrators. LAN emulation isn't a concern as it is with ATM, plus Gigabit Ethernet's 1G bit/sec. capacity is higher and will be less expensive than ATM's 642M bit/sec.

But those users should realize that to day Gigabit Ethernet requires fiber cabling on the backbone. The two copper interface standards haven't yet been finalized.

If you want to take advantage of gigabit technology today, but are hesitant about pre-standard products, gigabit uplinks are now rolling out from several start-ups and major vendors.

Uplinks create a fat pipe up to the

the number of diverse strategies used by vendors, LeBaron says. Every vendor has its own scheme, and it's too early to judge which will be the most effective or most likely to be adopted as a standard.

Some vendors have all traffic first go through a routing module that's added to the switch's chassis. Others add a routing process to each module in a switch that acts as a routing engine near the switch ports. Major vendors that don't want to be forced into niche roles offer several approaches that they pack with proprietary technology, such as Cisco with its NetFlow Switching and Cabletron with its SecureFast Virtual Networking.

"Now is not the time to make decisions on this technology. Wait if you can," Zagozski says. And many users are able to.

No matter how far users have bought in to switching, most never fully gave up their Layer 3 router, especially those who run large networks. "Layer 3 is not something you can get around; it needs to be there," LeBaron says. Somewhere on the network, there probably remains a router for creating boundaries within the network and for scaling large user communities.

ATM ALTERNATIVE

If you can't wait it out, and you absolutely must get traffic control or bandwidth management into your network today, your alternative is ATM, Zagozski says. "But if you have the luxury of looking at Layer 3 switching as a yearlong migration, it makes more sense to wait until the different Layer 3 schemes play out."

In the meantime, there are two overall approaches to begin evaluating. Add Layer 3 functions to a Layer 2 switch or add Layer 2 services to a router. Both will work, but Zagozski says it's more advisable "to add Layer 3 to a more forward-looking Layer 2 switching architecture than it is to retrofit an expensive Layer 3 router into a Layer 2 device."

The ultimate example of that approach is full-fledged routing switches. Take routers, those switches read every packet before sending them along, but they do it at close to Layer 2 speed.

Cut-through switches offered by many vendors today are another example of this approach. But these switches take a shortcut when processing packets. Instead of examining every packet, it reads only the first, then routes the rest to the destination of the lead packet.

But LeBaron warns against this cut-through technology. "This is routing through software," which she says can cause interoperability problems with other internetworking devices.

Besides, routers are getting just as fast as switches. So a lot of the shenanigans everyone is going through now is unnecessary because router performance will not be an issue much longer," LeBaron says. □



Users also should fully examine what they expect from Gigabit Ethernet, so they keep their expectations realistic.

they expect from Gigabit Ethernet so they keep their expectations realistic. Those looking at the technology as an alternative to Asynchronous Transfer Mode (ATM) — not just for the capacity, but for added services such as traffic management, prioritization and quality of service — should understand that ATM will hold a functional advantage for quite some time.

"Gigabit Ethernet vendors are being very careful when they talk about [quality of service], which is the standard that allows switches from different vendors to cooperate when handling traffic streams such as voice or real-time video," says Emerilda Silva, a senior analyst at International Data Corp. in Framingham, Mass. "It won't be near what vendors initially talked about," she says. This only matters to a relatively small number of users, because the majority of today's LAN segments carry data traffic only. But early adopters should realize Gigabit Ethernet will need time to mature and develop those capabilities.

Today, vendors have several ways to add intelligence to Layer 2 switches, without dragging performance down to that of routers. Unfortunately, choosing an approach is very confusing because of

backbone and are needed by anyone starting to connect 100-Mbit switches together, Silva says.

Trunking is another internetwork technology available from all the major vendors. As with uplinks, trunking also increases a pipe's performance to the backbone. But it does it by grouping the ports of a switch together. Both technologies can be leveraged by a Gigabit Ethernet backbone, no matter which vendor you choose.

LAYER 3 SWITCHING

Another evolutionary step for switches, beyond expanding to gigabit capacity, is Layer 3 functionality. Except for the router you probably still have on your LANs, you traded much of the intelligence your network had in find alternate paths around damaged segments for the speed of Layer 2 switches.

Today, vendors have several ways to add intelligence to Layer 2 switches, without dragging performance down to that of routers. Unfortunately, choosing an approach is very confusing because of

the heat

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FOCUS PAYS OFF FOR CABLETRON

By Kevin Burden

If you think the customer satisfaction scores on the right mean Cabletron Systems, Inc. is the only vendor worth calling for internetworking switches — hold on.

True, Cabletron apparently does a stellar job at satisfying its users, but it does so because it concentrates its efforts on a select, focused set of customers, according to Paul Zagaeski, a senior analyst at Giga Information Group in Cambridge, Mass.

If you fit Cabletron's target customer profile, you will be taken care of. If you don't, you'll never even get its attention.

But because Computerworld's customer satisfaction survey shows high user satisfaction in at least some areas for each of the other three leading switch vendors — Bay Networks, Inc., Cisco Systems, Inc. and 3Com Corp. — there may be no reason to look past your current internetworking vendor for switch technology unless you've developed a highly specialized industry or technology need.

Computerworld contacted 173 managers responsible for acquiring switching products. They were asked to rate their satisfaction with switching products as well as with their vendors' services and future direction.

Cabletron scored unusually high, starting with performance, right through every other category that should be heavily scrutinized when evaluating internetworking switches.

LOYAL CUSTOMER BASE

By concentrating on a narrow field of very large corporate, telecommunications and education sites, Cabletron can devote a lot of attention to building a very satisfied, very loyal customer base, Zagaeski says. "Cabletron has made its reputation by powerfully focusing on segments of the market they want to serve. And those companies just feel as if they are getting the best care possible."

On the flip side, Zagaeski says, "If you don't fit into those segments, then you don't count."

"We couldn't get Cabletron's attention, and we had 85 [Cabletron] switches," says Steve Lucas, a network manager for the city of Columbus, Ohio. The city had two Cabletron networks, one with 1,300 workstations, the other with 2,000. "And that wasn't enough for them to send out a systems engineer to help us," Lucas says.

Focused or not, there's no denying how highly

satisfied Cabletron users are. But let's be clear: High satisfaction doesn't necessarily mean superior products. Although the opinions expressed by the users of all four vendors fall in line with the expectations of several industry analysts, they don't represent any objective benchmarking. They are purely subjective measures that have little to do with raw performance or actual reliability.

For example, although Cabletron scored the highest for performance, that doesn't necessarily mean it has the best performing switches. It does mean Cabletron users feel that technology performs as well as anything else available. And based on their experiences, they expect Cabletron switches to continue the same performance standards.

EXPANDING EXPANSION

In some cases, grades do call out definite strengths, such as the expandability of Cabletron's switches. In no other category is there as wide a gap between Cabletron and its competition. Several users named expansion as one of the particulars they most liked about Cabletron switches, namely its MMAC-Plus switches. With it, "you buy one platform, one chassis and you'll be able to use it for 10 years," Zagaeski says. It was designed so all its modules are upgradable, even the backplane that everything plugs into in an upgradable module. "It was a very different approach when we looked at it. It's like what sold us on it — the fact that we could just pull out and add other boards," says Greg Moremle, chief of telecommunications at the U.S. Minerals Management Service in Herndon, Va.

Expandability can also mean reusability; modules can be taken out of one device and inserted into another, according to Zagaeski. "This has always been true with Cabletron switches and

only rarely true with other vendors."

Cisco's grades, while noticeably lower than Cabletron's, better reflect what the highest grades historically are in Computerworld's customer satisfaction surveys. "Very satisfied" grades from half of a vendor's response base is typically enough to set it ahead of competitors. But in this case, it's barely enough to squeak out second place over 3Com. Which goes to show again that your incumbent vendor may be as good a choice as any.

Cisco scores particularly well for reliability and performance, but users say you pay for every bit of it. Cisco has historically charged 20% to 50% more for its high-end router equipment, but it can't maintain those margins in the lower-end, highly competitive switch market, Zagaeski says.

Still, Lucas acknowledges that he paid top-dollar to standardize on Cisco devices. "We paid the price, but we justified the expense to one-stop shopping," he says. "We also get a lot of engineering support freebies because we give [Cisco] all our business, which makes the cost far less of an issue."

BAY TREPEDATIONS

Bay's overall satisfaction grade shows its users are slightly apprehensive about their vendor. Its overall satisfaction grade as well as the other categories don't appear too bad when considering it collectively had more than 80% of its users saying they were either "satisfied" or "very satisfied." But if the number of users saying they are very satisfied is any indication of how a vendor appeals to its customers, then Bay has some confidence building to do.

Bay's problems stem not so much from its technology as from its internal structure, according to Jay Borders, vice president of Giga. "Bay is recovering from a very difficult period, and these figures are a good reflection of the general doubts its users still have," Borders says. These are doubts about Bay getting its merger to actually happen, not just in name. As well as showing up in markets on time, which has been one of its plaguing problems.

Bay is known to be strong in its compatibility with standards, according to Mike Speyer, a program manager at The Yankee Group in Boston. Yet the general uncertainty still felt by its users kept its grade in that category lower than the industry might expect. "They didn't put any proprietary technology into its Adaptive Networking Strategy like NetFlow in the case of Cisco or SecureFast in Cabletron's case. It just hasn't articulated this strategy well enough to its users," Speyer says. □

Burden is Computerworld's features writer, Buyer's Guide.

SWITCHING TECHNOLOGIES

Which vendors do your peers think are doing the best and worst? Now and in the future?

WIN, LOSE OR DRAW

Cabletron scores the highest percentage of "very high" scores in most all satisfaction. Bay places last; 3Com and Cisco are virtually tied.

	3COM	CISCO	CABLETRON	BAY	
Performance	50%	62%	79%	47%	VERY GOOD
Reliability	57%	76%	79%	67%	VERY GOOD
Manageability	17%	36%	50%	19%	VERY GOOD
Expandability	43%	48%	76%	40%	VERY GOOD
Compatibility with standards	50%	64%	82%	51%	VERY GOOD
Overall satisfaction	50%	52%	79%	37%	VERY GOOD
	41%	40%	18%	53%	GOOD

Score: 0 = lowest, 100 = highest. 0.5 = one-half point. 0.25 = one-quarter point.

Source: Computerworld Information Management Group, Princeton, Mass.

CONFIDENTIALLY SPEAKING

Users' confidence lies with Cabletron, Cisco. Bay takes a spot in back of the bus.

Confidence with your switch vendor over the next two years
(Based on a 1-to-5 scale, in which 1 = not at all confident and 5 = very confident)

3COM

	Technical direction	Corporate stability	Service & support	Integration with other vendors
Technical direction	4.00			
Corporate stability	4.43			
Service & support	4.13			
Integration with other vendors	4.02			

CISCO

	Technical direction	Corporate stability	Service & support	Integration with other vendors
Technical direction	4.54			
Corporate stability	4.60			
Service & support	4.31			
Integration with other vendors	4.20			

CABLETRON

	Technical direction	Corporate stability	Service & support	Integration with other vendors
Technical direction	4.45			
Corporate stability	4.44			
Service & support	4.45			
Integration with other vendors	4.38			

BAY NETWORKS

	Technical direction	Corporate stability	Service & support	Integration with other vendors
Technical direction	4.03			
Corporate stability	3.98			
Service & support	3.95			
Integration with other vendors	3.88			

Score: 0 = lowest, 10 = highest. 0.5 = one-half point. 0.25 = one-quarter point.

Source: Computerworld Information Management Group, Princeton, Mass.

ATM

[Asynchronous Transfer Mode] A high-speed transmission technology that handles data, voice, video and television signals. Its high price and complexity opened the door for Gigabit Ethernet to compete for LAN backbone business.

NOW: Bay users are the most comfortable with their vendor's implementation of ATM; only two Cabletron users say their vendor has implemented ATM, and they rate it "average."

FUTURE: Cabletron gains the lead in future confidence of its implementation of ATM, followed closely by Cisco. yCom lags in last place.

ETHERNET — The dominant LAN technology in the corporate world, running at 10M bit/sec. over various types of wires.

NOW: Cabletron takes the lead again in Ethernet; yCom users place it last, with Bay slightly ahead of it.

FUTURE: Again, Cabletron leads the pack in Ethernet, with yCom placing last.

FAST ETHERNET — A way to run Ethernet at 100M bit/sec., up tenfold from traditional Ethernet. It's often used as an alternative to FDDI.

NOW: Cabletron and Cisco are neck and neck in the race for winning users' confidence in this technology.

FUTURE: Looking ahead, users rate Cisco slightly ahead of Cabletron; yCom trails far behind the pack.

FDDI — (Fiber Distributed Data Interface) A fiber-optic LAN that runs at 100M bit/sec. It's most often used on LAN backbones to link file servers and LANs.

NOW: yCom users place their vendor in the lead in FDDI delivery; Cisco users are the least confident.

FUTURE: Cabletron pulls the lead again, with Bay falling the furthest behind the others.

GIGABIT ETHERNET — An emerging standard for running Ethernet at 1G bit/sec. It can be a true alternative to ATM if it eventually supports real-time voice and video.

NOW: It's too early to gauge user confidence levels; Bay and Cabletron don't appear to have any users familiar with their technology; Cisco has three, and yCom has one respondent who say the vendor has implemented the technology.

FUTURE: Cisco users are placing their hopes with this vendor; yCom falls woefully behind the others.

SWITCHED ETHERNET — Ethernet networks that run through high-speed switches rather than hubs.

NOW: Cabletron and Cisco tie in user confidence.

FUTURE: Cisco breaks ahead of Cabletron slightly; users are least confident with Bay.

TOKEN RING — A ring type LAN developed by IBM. Its bandwidth tops out at only 16M bit/sec. and hasn't yet developed a high-speed solution.

NOW: Bay takes the strongest lead in this category; yCom comes in last.

FUTURE: Respondents rate vendors the lowest in the Token Ring category; Cisco places first in the lead, and Cabletron places last.

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CLOSING THE G A P



CA's Charles Wang on better aligning business and IT

When you're chairman and CEO of a \$4 billion software company, you talk to a lot of executives about information technology and business. Charles B. Wang, head honcho at Islandia, N.Y.-based Computer Associates International, Inc., has parlayed that experience into a book, Techno Vision II. Wang says the emergence of the Internet spurred him to update Techno Vision, published in 1994.

The goal of Techno Vision II is to identify and eliminate the disconnection between business executives and IS managers. The following excerpt is from Chapter 9, "Foundations for Realignment."

FOR AT LEAST the last 10 years, senior business and information systems executives have struggled with how to bring information technology and business into closer alignment. As business needs multiplied and the gap widened between the solutions IT offered and the business challenges facing managers, enlightened representatives of both camps reduced their commitment. The ideal is an alignment strategy that will optimize the provision of IT and service to the user community.

The focus of IS has changed from automating internal (back-office) processes to enabling multifaceted mechanisms for directly delivering products or services to the customer. The increased complexity of these systems is compounded by the fact that many are used for competitive advantage, giving them life-or-death urgency. The central argument now becomes how to organize IT to achieve higher levels of competitive advantage.

With today's shorter product cycles, the old IT culture leads inevitably to large development backlog and missed delivery targets. Corporate efforts to hold down total IT costs are also symptomatic of the old mentality and can be problematic, given strenuous business unit competition for available, sometimes even scarce, IT resources.

Notwithstanding a greater melding of IT and business units, alignment efforts must maintain professional IT work and systems standards and allow IT professionals practical career options. If you can offer opportunity and technology together, you have a better chance of identifying competitive-advantage systems.

Companies that have internalized these new realities have substantially eliminated the disconnect. These companies have the ability to access and process information on global competitive intelligence, new product information, research and development, market trends and environmental and regulatory impacts. Having done so, they can act quickly and then move on to the next challenge. Eliminating the disconnect removes many of the obstacles that paralyze organizations.

Many methods for aligning IT resources and business goals are already in use. I am privileged to visit hundreds of companies every year; my conclusion is that there are as many strategies as

there are companies. Every organization presents a unique set of constraints and opportunities. Yet I have found that a core set of business strategies is common to the most successful companies. I have identified five key strategies that organizations can adopt to eliminate the disconnect. A combination of these methods is probably best, because each is accompanied by risks.

1. Select the right CIO

I am convinced that while most chief executive officers are keen judges of character, most don't have a clue about how to recruit a chief information officer. Two things need to be kept in mind:

First, selecting the chief IT executive is a job a CEO cannot delegate. If you're going to have a CIO as one of your top-execution managers, if you're committed to having a close working partnership, then you have to select the CIO yourself.

Second, there is one fundamental question you have to ask yourself about each CIO candidate: Is this person CEO material? If this key question can be answered affirmatively, there is a good chance for the beginning of a true partnership between the CEO and the CIO.

Too many CEOs still perceive IT as an automating manual process. Until they see it as a tool to be more competitive, they will be tempted to ask their chief financial officers to pick the CIO. Most companies have IT reporting to the financial executive. The disconnect cannot be eliminated until this practice is retired.

The bottom line is that eliminating the disconnect requires a change of attitude. Both the CEO and CIO have to accept a new outlook. The CEO's responsibility is to learn some technology and open up the decision-making process. The CIO's contract is to accept the role of the businessperson chiefly responsible for making the technology serve the business.

2. Decentralize and disperse IT resources

Many companies have begun to decentralize or disperse IT resources to better align business and technical objectives. In solving some problems, decentralization and dispersal introduce others just as troublesome.

"Decentralization" is a broadly used term. I use

Closing the gap, page 100

Wang calls the Internet "the ultimate fully distributed threat to the status quo"

CLOSING THE GAP

CONTINUED FROM PAGE 99

it to refer to the process whereby a large, central IT group is broken up and physically placed with the business groups they support, but still report to a central IT unit. Thus while they are physically decentralized, there is no decentralization of management authority. While these groups are still managed by IT professionals, the IT resource is brought closer to the business units and their customers. This can only be good for the company.

Dispersed IT decentralizes management responsibility as well as physically relocating people. The IT professionals generally report to managers in the business departments and workgroups they serve. The result can be a very tight integration of technology and business applications.

There are a number of very problematic downsides to decentralization. In many cases, it does not address alignment, because systems are still developed according to traditional methodologies. Instead of one big disconnect, the company has created a number of smaller disconnects. Another downside is enforcing discipline and standards among the autonomous business units. For all its limitations, the centralized data processing function did develop an impressive record for maintaining data integrity, data security, the enforcement of standards and backup.

Decentralized IT units establish their own standards and procedures, often without regard to the rest of the enterprise. Without a strong CIO, communication between the decentralized units breaks down. Turnover in IT can also become more of a problem in decentralized units. IT

groups relocated to business units are sometimes ostracized and bypassed by increasingly sophisticated end users. Consequently, this kind of reorganization, without explicit attention to the culture, actually worsens the alignment situation.

Providing practical career options for decentralized IT professionals may be the most difficult issue. In some decentralized organizations, many IT professionals feel lost in the business units. Decentralization limits or terminates as many technical careers as it forges. Technical professionals know this. As a result, turnover can be high in the first few months following decentralization. On the other hand, some technical professionals really learn the business and make a home for themselves on the business side.

The key items for successful dispersion involve managing the migration to a business culture, which includes preparing both the IT people and their new business unit management. When preparation is not adequate, business unit management sometimes asks central IT to "take these people back."

3. Transform IT into a profit center

Another method for alignment is the conversion of the IT resources into a profit center. The idea here is to make the service nature of the IT resource explicit. In theory, the IT department has to provide its value to the other business units.

This strategy can, unfortunately, create a new set of contractual walls between IT and the user. But if the contracting process is managed well, user departments are much better off than before, when they were the captive customers of an often indifferent IT center.

An extension to this approach is to spin off IT as a separate business entity altogether. This sink-or-swim approach can transform inefficient data centers into models of productivity and can even return a profit to the parent company. The downside is that it forces the data center to focus much more energy on marketing as it pursues business opportunities.

I haven't seen making IT an independent profit center done well. [Management author and expert] Peter F. Drucker regrets coining the term "profit center." His well-taken point is that in the context of the business isolated from the customer, the very concept of the profit center is suspicious. "Profit comes only from the outside," he writes. "When the customer returns with a repeat order and his check doesn't bounce, then you have a profit center. Until then you have

only cost centers." Spinning off IT accomplishes little unless rigorous commitments to marketing, customer service, quality and other business objectives accompany the spin-off.

4. Advance end-user computing

An emphasis on end-user computing helps align business goals with IT because it puts both decisions into the hands of the people with the most intimate understanding of the business challenges. The benefits are immediate: Users get the systems they want because they themselves have built them. Since they are totally invested in the process, the resulting systems have a greater chance of being on target and are more likely to stay on time and on budget.

The principal problem with end-user computing is that end-user groups have not developed the data center disciplines that result in reliable, secure and robust applications. Systems developed by end users frequently suffer from data security and integrity flaws.

The good news is that emerging system software will help end users prepare applications that are as reliable and maintainable as those developed by professional programmers.

The key is to determine what kinds of systems end users can be expected to develop reasonably well, and how best to help them develop those systems. The goal is not to turn end users into programmers. Rather, the goal is to give end users tools they can use to access the information they need more easily. A side benefit is that end users learn more about IT, and the programming staff learns more about business goals.

Success depends on being able to move the IT professional into a consulting role to deal with cleanup and documentation requirements for business-critical systems. In any case, it does not seem likely or desirable that end-user computing can manage large, real-time, host-based operational systems, so it addresses only part of the business unit performance issue.

5. Promote evolution, not revolution

One consequence of the disconnect is an unthinking preference for revolution. I hope you will resist it. I believe it is almost criminal to destroy existing technology simply because something new comes along. There will always be something new coming along. But it will rarely be in the best interests of your business to abandon what is working well and risk replacing it with something that might work better.

The approach I favor is called "intelligent evolution," or building on what we know. It involves taking the technology that we know works as a foundation, and building on that foundation by adding the new technology. The most important aspect of this approach is that it respects and lets you leverage the significant investments you have already made in existing technology.

Think evolution, not revolution. Rethink how you can use existing technology, and you may find that you don't need to discard the old after all. Evolution limits risk while enabling the introduction of new technologies integrated with existing systems, so your company can continue to be responsive to the competitive demands of the market. □

From Techno Vision II: Every Executive's Guide to Understanding and Mastering Technology and the Internet, by Charles B. Wang. Copyright 1997 by Computer Associates International, Inc. Reproduced by permission of McGraw-Hill Cos. Hardcover, 286 pages, \$19.95, ISBN 0-07-068169-4.

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ILLUSTRATION BY STEPHEN DIAZ

By Alan Redding

CHRIS LUCKSTEDT has received phone calls from headhunters who try to interest him in networking jobs that pay more than \$100,000 per year.

With LAN/WAN skills, hands-on experience, project management experience and the personal relationship skills to handle demanding business managers, Luckstedt is a hot commodity in today's networking market. He would be more grateful for the attention. But as president of Infrasystems, Inc., a networking services company in Troy, Mich., Luckstedt is trying to hire the same kind of people. And they are in short supply.

Then there is the staffer at a government agency who has PC LAN experience but complains he hasn't had a raise in six years. He says he sees no prospects for promotion in his highly politicized agency. "Should I go for the MCSE certification?" he asks online. Advice: Go for the MCSE (Microsoft Corp. Certified Software Engineer), the key certification for Windows NT networking.

"NT is going great guns," says Paul Eichorn, systems manager at Desaulniers MacLeod, a recruiting firm in Chicago. Eichorn runs the firm's Novell network, but he may pursue an MCSE himself.

Overwhelmingly, recruiters, operators of job bulletin boards and hiring managers themselves consider Windows NT the hot networking platform and see soaring demand for NT skills. Qualified, experienced Windows NT networking professionals are pulling down top salaries and receiving signing bonuses of \$5,000 in some markets.

Driving the demand for Windows NT networking professionals is the adoption of Windows NT by large organizations. For example, JC Penney Co., the national retailer in Plano, Texas, is rolling out a massive Windows NT network to connect more than 1,200 stores and other facilities. And with the recent acquisition of pharmaceuticals company Eckerd Corp. in Largo, Fla., JC Penney expects to add several thousand more locations, all connected via Windows NT, says Carl Soorensen, senior project manager for IS recruiting at JC Penney. "Our networks are growing exponentially, and we are looking at a long-term expansion," Soorensen says.

Windows NT is getting the attention today, but networking skills across the board are in high demand. "Any type of LAN and WAN experience is in demand,"

says Michael Tyler, a budget analyst at the U.S. Department of Commerce and administrator of the Capital Telecommunications Professional job bank (www.ctips.com).

But don't think the big money goes to just anybody. You need to have a Certified Novell Engineer or MCSE certification and lots of experience, says John Barchie, Silicon Valley chapter president of the Network Professionals Association and a senior systems engineer at InfoMatrix in Pleasanton, Calif.

Barchie's own employer is looking for experienced network engineers. But as a networking services network engineer, vendor, InfoMatrix particularly needs engineers who are self-directed and can communicate with customers. □

Rodding is a freelance writer in New Haven, Mass.

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Networking professionals profiled A look at their backgrounds, skills and career goals

CURRENT POSITION:

PAUL EICHORN

Systems manager at Desaulniers MacLeod, a Chicago recruitment company. Manages the corporate Novell network.

PREVIOUS CAREER:

Employment recruiter

Self-taught on the job, took computer courses at a local college. "While I was a headhunter, I saw secretaries taking up networking and getting ahead," he says. He bought a PC and learned its functions. He also took a job as a support person, where he acquired on-the-job computer skills.

FUTURE GOALS:

Wants to pursue advanced networking certification through university-affiliated program.

JOHN BARCHIE

Senior systems engineer at InfoMatrix in Pleasanton, Calif.

Computer salesman

A few computer courses in college. Received CNE certification in 1990. Barchie paid \$7,500 for classes to earn his CNE. He quickly landed a job that paid \$15,000 per year, far above his previous salary. A year later, he earned \$15,000. His salary is now above \$70,000.

Wants to leverage his extensive on-the-job experience, certifications and customer reputation to take on greater responsibilities at higher pay.

CHRIS LUCKSTEDT

President, Infrasystems, Troy, Mich.

Local networking services provider where he picked up his CNE

College education in literature, hobbyist interest in computers. Learned computers and networking at a small networking company, which helped him earn a CNE. Continues to take seminars and attend networking conferences and symposiums but hasn't had further formal network training.

Wants to build company to the point where he can go back to college and finish his literature degree.

By the Book

Books

CD-ROMs

Videos

Managing in a Flexible Workplace

By Barney O'Leary and Suzanne Smith
American Management Association, New York, 1997.
227 pages; \$22.95.



If Christopher Columbus had been offered a map of the New World as he stepped aboard the Santa Maria, he would have been a fool not to take it.

Similarly, in today's new world of work — with flextime, telecommuting, job sharing and the widespread use of part-time workers

— temporary workers and consultants there should be lots of interest in *Managing in a Flexible Workplace*.

This is a world that hasn't yet been mapped. In thousands of workplaces, individual employees and their managers struggle every day to redefine their roles and responsibilities. Those struggles range from the trivial — say, whether to involve contract employees to the company picnic — to far more substantive issues such as how to build low-supervision/high-motivation teams that are diverse, dispersed and compensated in different ways. The authors have produced a book that maps much of that unknown territory.

Despite its somewhat dry, textbook-like tone, the book is content-rich. It offers scores of useful thoughts and observations about how to navigate in the new work environment. Indeed, the book is worth reading simply as a reminder of how much the nation's work environment has changed in little more than a decade.

But because it offers so much that's concrete and useful, the book isn't for only the academically inclined.

For instance, there are solid, real-world examples of some lesser-known work options such as "phased retirement" and "V-Time."

And there are examples discussing how these programs have been implemented by several companies to help them retain access to hard-to-replace employee skills. Given how fundamental the book's focus is, it should be required reading for managers and employees at every modern organization.

— Alan R. Earls

Six-Figure Consulting

By Dr. Gary Scott Goodman
Amacom, New York, 1997
pages: \$37.95 (paperback)

Gary Scott Goodman offers an impressive-looking biography. *Fortune 1000* consultant, telemarketing wiz, best-selling author, academic. The book promises to be an insider's guide, rather than a simple how-to manual. Its breezy conversational style is indeed a far cry from the measured, methodical prose associated with a conventional text. It reads more like a motivational speech (Goodman is also a lecturer) and includes some illuminating anecdotes and useful psychological insights into the major players in the consulting arena.

Unfortunately, the practical advice that does exist in this volume is subtended by the author's carelessness, ama-

teurish writing. An informal approach isn't necessarily a bad thing, but Goodman takes laxity to extremes. The book is so loosely structured, it's difficult to follow Goodman's train of thought: Point E precedes Point A, which comes after Point C. The first is riddled with capricious punctuation, malapropisms and very bad grammar.

Those transgressions are distracting in themselves, but more importantly, they undermine Goodman's credibility.

It's difficult to imagine someone whose written work can be so sloppy being hired by a major corporation to solve its telemarketing problems. Then again, maybe that's a testament to Goodman's true marketing genius.

— Melanie Menagh

Tom Peters' Career Survival Guide: A Practical Guide to Getting Ahead in Imprecise Times
CD-ROM (for Macintosh, Windows 3.1 and Windows 95)
Houghton Mifflin Co. Interactive,
Boston, Mass.: \$39.95

Is Tom Peters still relevant? After so many years of selling his brand of business salvation, one might wonder. But if this CD-ROM (Peters' first) is any indication, the answer is still a more or less resounding yes.

After all, one of the secrets to Peters' success is his personal energy and irreverence, and thus interactive CD-ROM reflects that better than any mere print book could.

Peters makes us think. To be sure, many of his observations about careers in the late 1990s are rather ho-hum.

But coupled with lively graphics, film clips and sound — and a sort of career diagnostic scoring method — Peters has an impact.

The CD-ROM is organized as three "courses." The first, "Reinvent Yourself," invites job seekers to explore the changing nature of the workplace and what that means for their next career move. The process includes hands-on exercises, interactive brainstorming sessions and video clips from the real world.

The second course, "Be A Project Maniac," offers a new way of thinking about time and priorities. It's built around "The Tom Peters Project Builder," a means for tracking activities, goals and accomplishments on a weekly basis.

The third course, "Thank Resume," encourages job seekers to reexamine long-standing career beliefs and discover valuable job skills hidden in past experiences.

— Alan R. Earls

Keep Your Job! The Secrets to Being Indispensable

Hosted by Geoffrey Colvin, Fortune magazine editorial director
Fortune Video, Time, Inc., New York, 1996; 45 minutes; with 76-page resource booklet and audiotape: \$79.95

Although there's virtually no IS-specific advice here, there's much for information sys-

tems people to think about.

In an era where corporations downsize regularly due to acquisitions, new technology, worldwide competition and government deregulation, this video offers practical advice on how to judge your own employability by revitalizing your company, your job and yourself.

The video targets employees rather than managers; its strength is that it speaks in terms that a viewer can apply to his own job. Many will identify with the video's descriptions of dealing with a difficult boss, trying to make sure major accomplishments don't go unnoticed or attempting to cultivate key decision-makers to enhance one's future.

Some of the advice offered is predictable, such as the revelation that you can anticipate threats to your job by noticing when your company loses customers or suffers a decline in market share. But other tips are more practical.

The video asks whether, even though you may be good at your job, you can explain to a manager or a peer why you're valuable to your company. Learning the art of self-promotion is important because, like corporations, employees must be able to differentiate themselves.

The video also suggests it's rather harsh, but probably useful, form of self-examination: Seek out people in your company who have a negative impression of you and ask them about it. The video offers key survival ideas you should think about before trouble comes your way.

— Steve Alexander

Get The Job You Really Want! Proven Job Search Strategies

Hosted by Geoffrey Colvin, Fortune magazine editorial director; Fortune Video, Time, Inc., New York, 1996; 60 minutes; with 76-page resource booklet and audiotape: \$79.95

This video deals with the nitty-gritty process of job searching. As a result, there's practical advice for nearly everyone. But the video doesn't include IS-specific information.

Get the Job You Really Want is about how to search for a job intelligently. It says if you prepare yourself properly and pursue the job market with a plan, you will get the job you really want.

The video deals with the entire process of a job search, including coping with your feelings after losing a job, learning to set priorities when investigating the job market and learning to present yourself in a resume and job interview.

The greatest value of the video may be that it shows that a job search is really a voyage of self-discovery. One of the most interesting insights is that, although substance may get you a job, how you appear to other people will be more important in the initial stages. Appearance consultants say sends an employer some subtle messages: a man's worn-out belt may suggest worn-out ideas; a candidate's chronological resume may conceal their strongest points, talking too much in an interview could annoy the interviewer, and using too many hand gestures may betray that you're uncomfortable.

— Steve Alexander

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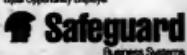
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Computerworld Career Index

Percent projected change in number of employees from July through September 1997



Marketplace

NEW & NOTABLE

ReTec Focuses on Two New Services

Relational Technologies, Inc. (ReTec™), a Midwest software consulting company, recently announced the addition of two service practice groups, the Internet Information Systems Practice and the DBAccess™ Practice. "This allows us to target two growing areas of our industry in which the demand for talent greatly outweighs the supply," comments Wayne Somers, ReTec's Vice President of Marketing.

The Internet Information Systems Practice focuses on traditional Web-based solutions, but with a twist: a database backbone that combines traditional relational database technology benefits with the now-familiar connectivity of the Web. "We've already whi-

nessed how small businesses profit from the visibility of the global online market," remarks Practice Manager Brian Shandley. "But simple home pages aren't enough — taking the next step to manage information exchanged online can make these businesses even more visible, productive and profitable. I want ReTec to help these small businesses realize their growth potential."

The DBAccess Practice is based on the concept of remote database support and preventative maintenance. This service targets companies who can't afford, don't need, or don't want a full-time data-

base administrator (DBA), and those who need additional support or expertise. "ReTec offers companies a mechanism to ensure the smooth operation of their databases and to reduce the costs associated with managing the same. This fully customizable service is designed to meet the specific needs of each client, allowing companies to supplement existing staff to prepare and handle all database situations, planned or unplanned," says Michele Pompilio, Practice Manager for DBAccess.

Mike McIntrye, President of ReTec sees the addi-

tion of these two new services as their business as an indicator of trends within the industry. "As the customer project and service offerings become more diverse globally, small to midsize consulting companies need to do two things to survive: specialize, and partner with others. These two practices attack the first issue and begin to embrace the second."

In addition to the above services, Relational Technologies provides custom database solutions, product installation and upgrades, database migrations, hardware recommendations, capacity planning, education, and general consulting. Relational Technologies can be contacted at <http://www.retec.com> or 800.86.RETEC (800-867-3832).

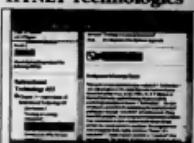


Best of breed document management and electronic publishing solution by HYNET Technologies

HYNET Technologies, a developer of document management solutions for corporations and universities, has announced the company's debut with the Digital Library System (DLS). HYNET Technologies' DLS incorporates the best elements of document management and electronic publishing to create an open solution for the Internet, intranet, and CD-ROM. The product offers security, full-text search of content and user annotations, and dynamic information structures and supports open standards such as SQL, SGML, and XML. Due in HYNET Technology's understanding of the Internet, it is the first to offer a unique pricing option for

the HYNET DLS that allows unlimited titles, web access and CD-ROM distribution. HYNET's DLS consists of patent-pending technology and has been adopted by major organizations such as Novellus Systems, and the University of Southern California. HYNET DLS incorporates the best characteristics of electronic publishing, including retrieval of information at the paragraph level, full-text search of user annotations and multiple views of queried information, with the best attributes of document management solutions, including document storage and security. HYNET's solution is flexible, user-friendly, and — unlike other full-

featured document management or electronic publishing solutions — HYNET offers an open, flexible and secure solution that allows users to edit information at any point in the process. HYNET is the first to offer the revolutionary Binder architecture, which allows users to "shuffle" document content and structure after the document has been published. HYNET's solution allows the creation of views and editions of documents without re-indexing or duplicating document information. Other options include a gateway to SQL databases, support for English and 4 Asian languages and additional training, services and



support. For more information visit: <http://www.hynet.com> or contact David Cheng at david@hynet.com or (650) 637-6376.

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Account Executive: Laurie

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Administrator: Eric P. Pappas

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Philip Bradtmiller, 2474 S.

Hawthorne Rd., Ste. 131, Orlando, FL 32813 (407) 521

Fax: (407) 521-4719

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INDUSTRY ALMANAC

Clock ticks for Verity

Analysts say Verity, Inc. (Phoenix/VERI) in Tempe, Ariz., is running out of time to turn itself around. Improved financial results aren't seen in the next quarter, analysts say, and the company's future is questionable. Verity last week announced a net loss of \$9.3 million for its first fiscal quarter ended Aug. 31. This follows a previous fiscal year end with a \$37.9-million loss last fall. The software company previously sought revised and information-filtering products for the Internet and corporate intranets.

Revenue for Verity's first quarter was \$9.1 million, with a loss of \$9.3 million. Revenue for the same period last year was \$1.6 million, with a loss of \$3.9 million.

David Beck, an analyst at TD Securities, Inc. in Toronto, has a Hold rating on Verity stock. "The company has good, well-managed products, but it is in a major transition period right now," says Verity's new CEO, Gary J. Sheen, expected to announce significant cost cuts and some product reorganization in the next few months, according to Beck. And results from those changes should show up in Verity's next quarterly report. "It's a slow-to-execute type of thing."

Sheen is also CEO of Project Pacific Management Corp., a leveraged management firm in Cupertino, Calif. Verity recently joined the services of Project Pacific Management on July 31 after the departure of several senior managers.

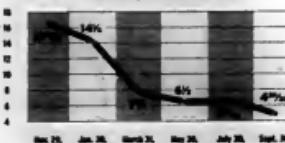
"I don't have an argument against Verity's technology," says Michael Murphy, editor of the "Offshoring Technology Stock Letter" in Half Moon Bay, Calif. "My problem is with the uncertainty of the company's business model and its ability to maintain a product lead."

Verity says Verity is "burning" through at least \$6 million per quarter. And at that rate, the company will run out of money by about May 1998, he says.

— Nancy Olien

VERITY DICEY

Some analysts say a Verity turnaround in the next quarter will be crucial



Nov. 20, 1996 Jan. 30, 1997 March 31, 1997 May 31, 1997 July 31, 1997 Sept. 30, 1997

Stock	52-Week Range	Qtr 2 2-Week Change	Wk P/R Change	Wk P/R Vol.	Share	52-Week Range	Qtr 2 2-Week Change	Wk P/R Change	Wk P/R Vol.
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CDW	\$1.32 - 24.00	-\$1.00	-8%	1.1	1,000	\$1.32 - 24.00	-\$1.00	-8%	1.1	1,000
ADM	\$1.15 - 52.00	+\$0.00	+0%	1.1	1,000	\$1.15 - 52.00	+\$0.00	+0%	1.1	1,000
CS	\$1.15 - 31.00	+\$0.00	+0%	1.1	1,000	\$1.15 - 31.00	+\$0.00	+0%	1.1	1,000
CLDN	\$1.00 - 3.00	+\$0.00	+0%	1.0	1,000	\$1.00 - 3.00	+\$0.00	+0%	1.0	1,000
CMT	\$1.00 - 3.00	+\$0.00	+0%	1.0	1,000	\$1.00 - 3.00	+\$0.00	+0%	1.0	1,000

DE	\$1.00 - 10.00	+\$0.00	+0%	1.0	1,000	\$1.00 - 10.00	+\$0.00	+0%	1.0	1,000
DPS	\$1.00 - 10.00	+\$0.00	+0%	1.0	1,000	\$1.00 - 10.00	+\$0.00	+0%	1.0	1,000
DIS	\$1.00 - 36.00	+\$0.00	+0%	1.0	1,000	\$1.00 - 36.00	+\$0.00	+0%	1.0	1,000
DLX	\$1.00 - 10.00	+\$0.00	+0%	1.0	1,000	\$1.00 - 10.00	+\$0.00	+0%	1.0	1,000
EMC	\$1.00 - 11.00	+\$0.00	+0%	1.0	1,000	\$1.00 - 11.00	+\$0.00	+0%	1.0	1,000

ET	\$1.00 - 11.00	+\$0.00	+0%	1.0	1,000	\$1.00 - 11.00	+\$0.00	+0%	1.0	1,000
FRT	\$1.00 - 10.00	+\$0.00	+0%	1.0	1,000	\$1.00 - 10.00	+\$0.00	+0%	1.0	1,000
GEA	\$1.00 - 10.00	+\$0.00	+0%	1.0	1,000	\$1.00 - 10.00	+\$0.00	+0%	1.0	1,000
GEI	\$1.00 - 10.00	+\$0.00	+0%	1.0	1,000	\$1.00 - 10.00	+\$0.00	+0%	1.0	1,000
GEK	\$1.00 - 10.00	+\$0.00	+0%	1.0	1,000	\$1.00 - 10.00	+\$0.00	+0%	1.0	1,000

GEW	\$1.00 - 10.00	+\$0.00	+0%	1.0	1,000	\$1.00 - 10.00	+\$0.00	+0%	1.0	1,000
GIL	\$1.00 - 10.00	+\$0.00	+0%	1.0	1,000	\$1.00 - 10.00	+\$0.00	+0%	1.0	1,000
GOOG	\$1.00 - 10.00	+\$0.00	+0%	1.0	1,000	\$1.00 - 10.00	+\$0.00	+0%	1.0	1,000
GTE	\$1.00 - 10.00	+\$0.00	+0%	1.0	1,000	\$1.00 - 10.00	+\$0.00	+0%	1.0	1,000
GUAR	\$1.00 - 10.00	+\$0.00	+0%	1.0	1,000	\$1.00 - 10.00	+\$0.00	+0%	1.0	1,000

HAN	\$1.00 - 10.00	+\$0.00	+0%	1.0	1,000	\$1.00 - 10.00	+\$0.00	+0%	1.0	1,000
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HBI	\$1.00 - 10.00	+\$0.00	+0%	1.0	1,000	\$1.00 - 10.00	+\$0.00	+0%	1.0	1,000
HCL	\$1.00 - 10.00	+\$0.00	+0%	1.0	1,000	\$1.00 - 10.00	+\$0.00	+0%	1.0	1,000
HDX	\$1.00 - 10.00	+\$0.00	+0%	1.0	1,000	\$1.00 - 10.00	+\$0.00	+0%	1.0	1,000

HMC	\$1.00 - 10.00	+\$0.00	+0%	1.0	1,000	\$1.00 - 10.00	+\$0.00	+0%	1.0	1,000
HPE	\$1.00 - 10.00	+\$0.00	+0%	1.0	1,000	\$1.00 - 10.00	+\$0.00	+0%	1.0	1,000
HPS	\$1.00 - 10.00	+\$0.00	+0%	1.0	1,000	\$1.00 - 10.00	+\$0.00	+0%	1.0	1,000
HSC	\$1.00 - 10.00	+\$0.00	+0%	1.0	1,000	\$1.00 - 10.00	+\$0.00	+0%	1.0	1,000
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HWI	\$1.00 - 10.00	+\$0.00	+0%	1.0	1,000	\$1.00 - 10.00	+\$0.00	+0%	1.0	1,000
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IBB	\$1.00 - 10.00	+\$0.00	+0%	1.0	1,000	\$1.00 - 10.00	+\$0.00	+0%	1.0	1,000
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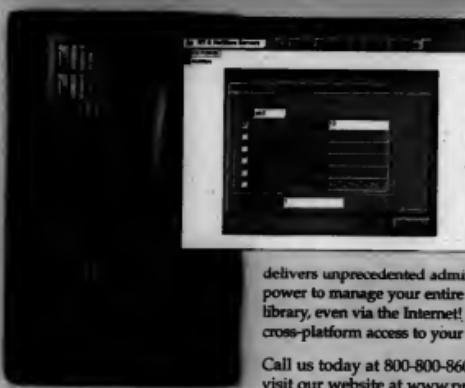
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Male phone number _____ (609) 879-0700
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Male fax number _____ (609) 879-8712
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MAIL SUBSCRIPTIONS

PO Box 517, 500 Old Connecticut Path,
 Framingham, Mass. 01702

Phone _____ (609) 879-4451
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Back Issues _____ (609) 879-8729

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COMMENTARY

Things they don't teach you in Management 101

Bill Laberis

The IT labor market today is characterized by too many jobs competing for too few candidates, a supply/demand imbalance that will continue for the foreseeable future. The focus has turned from recruiting strategies to ways to retain your best people.

Correspondingly, there's been a flood of how-to articles with tips for keeping your best people. Some of this information is actually good.

I managed large numbers of high-octane professionals in a pressure-cooker for 13 years — successfully, too, if low turnover is an indication.

I think much of what is considered common IT management sense ignores some less conventional advice for hanging on to your best people. Herein is some unconventional, but no less time-tested, advice:

- **A week around HR as often as possible.** Get your people to come to you, not the human resources department. HR workers tend to be intrusive. They absolutely thrive on bureaucracy; they develop writ-

ten procedures in characteristically convoluted language, and 90% of what HR does can be handled by a well-constructed intranet.

Just about all the issues that employees take to HR are far better handled in your own department.

- **Set up a mouth-revealing open-door policy** wherein a worker can discuss issues and problems with no fear of suffering prejudice as a result.

- **Make peer reviews a part of performance reviews, including your own.** Workers are traditionally evaluated by



the bosses. But who knows better how an employee is working day-to-day than his peers? And while you're at it, make darn sure the employee evaluation process includes employees' evaluation of you.

Yet, you...

Collect the results, which should be anonymous, then promise all employees or direct reports that you'll deliver a sum-

mary on the results. Even better, select someone from the staff to collect, tabulate and report on the results so you and the staff see the summary at the same time. That's called putting your arse on the line. It's also called leadership and courage. Then fix the things in your management

style that need fixing.

- **Stop pushing training.** I'm dead serious. Professional trainers and HR types assume everyone needs and wants training. This is one of the greatest falsehoods perpetrated on unsuspecting man-

agers. Some people, perhaps many, get all the training they need while at work. It used to be called "on-the-job training."

Other people — good workers, too — get to a certain point in their professional development and are very happy to stay right there, producing for you day after day. I would guess that 90% of what's taught in training classes is lost or forgotten within two weeks; most of the rest within a month.

- **Lighten up!** Your workers spend as much as or more time with you during the week as they do with their spouses and friends. Surprise them with things that show you care. During one very busy time at work, current Computerworld editor Paul Gillin and I showed up at 7:30 a.m. and commenced cooking made-to-order omelets on the premises for the staff, serving them individually.

An omelet had a far more positive effect than any HR policy I've ever seen.

Of course, we had to break eggs... ☺

Laberis was editor in chief at Computerworld from 1986 to 1996. He is president of Bill Laberis Associates, a consulting and publishing company in Holliston, Mass. His Internet address is bill@laberis.com.

What does 'productivity' mean?

David Moschella

Like El Nino, the debate over how to measure computer productivity periodically sweeps over the IT industry landscape. And like what's occurring in the Pacific Ocean today, the debate has been particularly stormy this time around.

Technology enthusiasts boldly proclaim a pending high-growth economy, but some of the nation's leading economists scoff at such notions. Even more skeptical, Paul Strassmann has argued in the pages of Computerworld that computers have yet to make companies more productive.

If you're confused, it's not your fault. All sides are talking past one another.

On the surface, the issue seems unarguably simple. If computers don't spur productivity, companies that don't use computers should do as well as or better than those that do. Consequently, all we need to do is compare the performance of noncomputerized banks, airlines, retailers, etc., to that of their digitally integrated competitors.

There's only one catch: The former no

longer exist. Thus, the evidence seems overwhelming: Productivity is a minor issue; computers are a matter of survival.

Businesspeople instinctively know this. They analyze IT return on investment (ROI) to resolve particular situations, not to justify the overall impact of IT.

The effective use of technology is both a competitive requirement and one of few sources of sustainable advantage. But trying to measure IT's overall ROI is like trying to measure the value of telephones or electricity. Why bother?

By contrast, professional economists

tend to focus on the growth of the overall economy. To an economist, growth is very simple: It can result only from more workers or more output per worker. The output per worker is what economists mean by "productivity."

The following example demonstrates the narrowness of this term. Imagine two competing companies, each with 10 workers. Suppose a new technology enables both companies to make their

products twice as capable without any increase in cost.

Economists would say there was no improvement in productivity, since the same 10 people are building the same type of product for the same cost. But from a business perspective, failure by either firm to adopt

this technology would equal competitive suicide.

This semantic gap has existed for years. Efforts by pundits, journalists and other technology enthusiasts to inject the power of computers into the national economic debate has breathed new life

into the issue. The pundits' premise is that the wonders of cyberspace will allow the economy to grow much more rapidly than the current average of 2% per year. It would be great if they were right.

For technologists to be taken seriously in the forecasting business, they must adopt the rules of the game. That means using the economic definition of productivity. But if they do so, the mainstream economists will carry the argument.

Although technology will continue to do amazing things, there's no reason to think that its relationship to economic growth is about to change dramatically.

But before you despair, don't forget that the economist's definition of productivity doesn't match yours or mine. Businesses that don't effectively use computers won't survive, let alone thrive. Common sense still says that building a thriving company implies being productive. That economists define it otherwise is fine for their macro purposes. Just don't let their arguments slow down your IT investments ☺

Moschella is an author, independent consultant and weekly columnist for Computerworld. His Internet address is david_moschella@cs.com.

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still thinks of us as only a voice
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NORTEL MAGELLAN

Do you have a
Power Network?

The Back Page

altcw

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HIGH-TECH SCANNER FOR LOW-TECH CUSTOMERS

BY JEFFREY M. HORN / Staff Writer

IBM's new scanner makes it easier to make changes in customer orders. So Nashville

based OBOS Inc. has put scanners in the offices of its

best customers so they

can feed handwritten

forms into the order-

entry system. The one-

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OBOS Inc. in Wilmington, Del.

To submit the image to a handprint-recognition

algorithm that converts it to an electronic order.

Digital archives



20 YEARS AGO
(OCTOBER 1977)

- Industry leaders complain of a shortage of computer programmers.
- IBM and Burroughs have sharply rising profits.

■ Headline: Programmer productivity lagging, report says

10 YEARS AGO (OCTOBER 1987)

- The "Black Monday" stock market crash is blamed on computerized "program trading."
- Microsoft announces the Excel spreadsheet for Windows, releases Word 4.0 for PC, and ships Windows 2.0.
- Compaq introduces the 20-MHz Deskpro 386 PC.

E-mail etiquette update

Gentle Readers —

You already know not to SHOUT in E-mail. But what exactly is the proper salutation and closing? "Dear Madam or Sir" or "Yours sincerely" seem too formal and "Yo!" not formal enough. In a recent column, etiquette arbiter "Miss Manners" (a.k.a. Judith Martin) suggests that E-mail falls somewhere between the extremes, with a formality level akin to a postcard. That means starting with the recipient's name followed by a dash and ending with a dash plus the sender's name. But Miss Manners says she will keep the question open if anyone wants to suggest a reasonable alternative.

— Mitch Betts

Digital snafus

A beautician in Thailand was amazed as a cash machine dispensed more than \$20,000 in local currency because of a software error, Reuters reported last month. After returning the cash, the man's reward was a set of crockery with the banks logo.



"Miss Manners"

Inside Lines

Server sales flat now

IBM will finally join its Unix server ranks in the 64-bit club this week. Sources said the computer giant plans to expand its ES/9000 line, with a 32-processor system, multi-threaded Rseries, that comes with a 64-bit microprocessor and operating system. The 64-bit chip is the same one used in a new batch of 800-plus machines IBM rolled out last month. IBM declined to comment.

Code will be needed

It won't be enough that Microsoft launched its Internet Explorer 4.0 browser in time for Christmas, the bodyguard of Internet and Web surfing. Some of those old and crusty Microsofties made the rounds over the holidays. They handed a 300-page, 20-cent Microsoft "e" logo (for Explorer) to the chartering parlor in McLean's front room (see story, page 10). They even left a greeting card with a picture of baby-crying. "We just had fun," a Microsoft spokesman insisted the incident as "childish and unprofessional." Huh, huh.

Office, anyone?

Paul Green, a product manager at Microsoft, announced June 1 at the Software Developers' Show that he's left work in Washington, nothing else doesn't run on Windows 3.1 because it's really a 32-bit environment, Green said. "There are millions of users who are being left out," he said. He would look to the network. Visual Basic 4.0, Microsoft's most popular tool, builds applications for all platforms.

One could be proud

Novell is expected to announce on Oct. 20 the next version of its GroupWise messaging and collaboration system. The new version is expected to include technology called the Jefferson Project, used to publish documents to a Web server.

The bad guys are

The bad guys are back, but product development is moving forward. United微电 and Infineon Technologies are developing a 1.5-micron process for the development of memory chips. The two companies will plug-in their respective 1.5-micron technologies to Infineon's 1.5-micron cluster. Infineon's 1.5-micron cluster is currently the largest in the world. Other companies are also working on 1.5-micron technology.

Should I buy?

The answer is yes, but you should be careful. Microsoft's Office 97 suite is a good deal, but it's not perfect. It's got some bugs, and it's not always compatible with other programs. It's not always the best choice for every application.

Miss leading, miss flavoring

Nothing is more important than flavoring your e-mail. If you're not doing it, you're missing out. It's not just about the flavoring, though. It's also about the message. You want to make sure your message is clear and concise.

Don't be afraid to ask for help

Don't be afraid to ask for help. If you're not sure how to do something, don't be afraid to ask for help. It's not a sign of weakness. It's a sign of strength. You're not alone. There are people who can help you.

To prove the ability of its multicasting software to push data over any kind of network, Probito, Inc. in Boulder, Colo., will transfer files over herbed wire during demonstrations this week at Network/Interop '97 in Atlanta. You don't have to go to such extremes to get our attention. Just phone your tips and gossip to news editor Patrice Keefe at (508) 820-8183 or E-mail her at patrice_keefe@cw.com.

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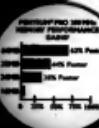
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